

# COMMERCE

JULY 1956

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For Excellence in Architecture — See Page 5

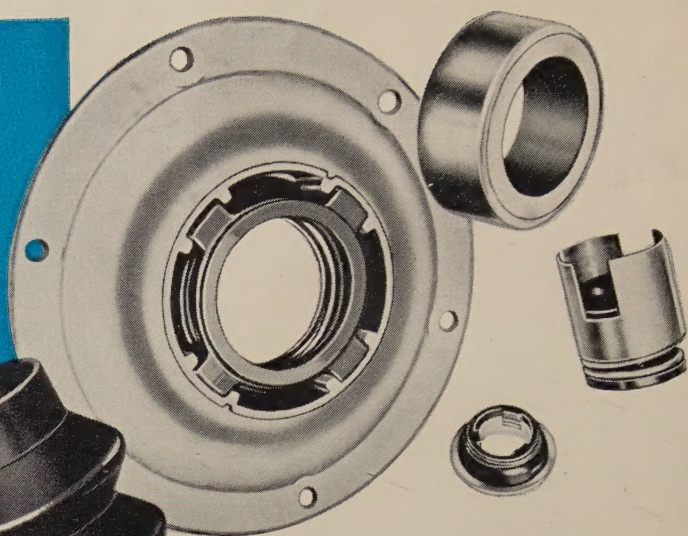
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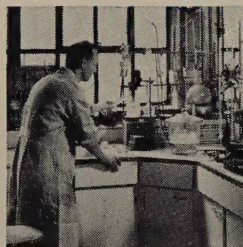
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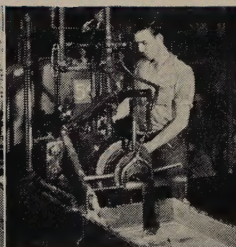
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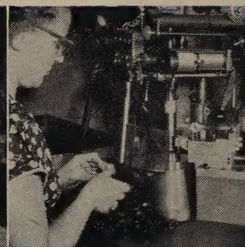
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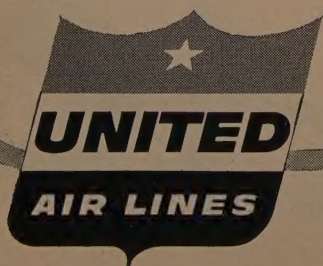




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## Chicago Business

	May, 1956	April, 1956	May, 1955
Building permits, Chicago.....	3,252	3,100	1,178
Cost .....	\$ 28,684,742	\$ 37,632,845	\$ 27,640,100
Contracts awarded on building projects, Cook Co. ....	3,671	3,111	5,408
Cost .....	\$ 105,175,000	\$ 128,110,000	\$ 166,753,000
(F. W. Dodge Corp.)			
Real estate transfers, Cook Co. ....	9,093	8,490	9,338
Consideration .....	\$ 8,995,855	\$ 5,147,758	\$ 4,417,000
Bank clearings, Chicago.....	\$ 4,867,552,069	\$ 4,726,281,839	\$ 4,663,799,237
Bank debits to individual accounts:			
7th Federal Reserve District .....	\$27,139,000,000	\$26,171,000,000	\$26,175,000,000
Chicago only .....	\$13,310,306,000	\$13,059,579,000	\$12,927,215,000
(Federal Reserve Board)			
Bank loans (outstanding) Chicago weekly reporting banks .....	\$ 3,713,000,000	\$ 3,656,000,000	\$ 2,875,000,000
Midwest Stock Exchange transactions:			
Number of shares traded .....	2,645,000	2,416,000	1,789,000
Market value of shares traded .....	\$ 89,806,811	\$ 87,442,075	\$ 61,002,912
Railway express shipments, Chicago area .....	881,396	873,388	821,877
Air express shipments, Chicago area .....	70,599	70,475	65,990
L.C.L. merchandise cars, Chicago area .....	18,293	17,005	17,697
Electric power production, kwh, Com. Ed. Co. ....	1,568,784,000	1,533,659,000	1,393,364,000
Industrial gas sales, therms, Chicago .....	16,426,355	15,869,570	14,092,438
Steel production (net tons), metropolitan area .....	1,949,300	1,905,300	1,915,600
Revenue passengers carried by Chicago Transit Authority lines:			
Surface division .....	43,973,141	41,328,887	43,564,399
Rapid transit division .....	9,762,744	9,342,440	9,224,377
Postal receipts, Chicago .....	\$ 13,067,154	\$ 12,386,859	\$ 11,605,955
Air passengers, Chicago airports:			
Arrivals .....	365,582	364,736	372,855
Departures .....	385,500	373,887	387,280
Consumers' Price Index (1947-49=100), Chicago .....	118.6	118.1	117.5
Receipts of salable livestock, Chicago .....	387,303	431,917	441,250
Unemployment compensation claimants, Cook and DuPage counties .....	32,582	45,988	60,977
Families on relief rolls:			
Cook County .....	22,775	25,400	28,577
Other Illinois counties .....	13,151	14,468	15,377

### August, 1956, Tax Calendar

Date Due	Tax	Returnable to
1	Franchise Tax becomes delinquent and penalties of 1% per month begin to accrue	Secretary of State
15	Illinois Retailers' Occupation Tax, MROT and Use Tax return and payment for month of July	Dept. of Revenue (Ill.)
15	If total Income and Social Security Taxes (O.A.B.) withheld from employee plus employer's contribution withheld in July exceed \$100, pay amount to	Authorized Deposita



# COMMERCE

## Magazine

Published since 1904 . . . by the  
Chicago Association of Commerce  
and Industry • 1 North La Salle St.,  
Chicago 2, Ill. • Franklin 2-7700

July, 1956

Volume 53

Number 6

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Published monthly by The Chicago Association of Commerce and Industry, with offices at James and North Cook Streets, Barrington, Ill., and 1 North LaSalle Street, Chicago 2, Ill. Subscription rates: domestic \$3.50 a year; three years \$7.50; foreign \$4.50 a year; single copies 35 cents. Reentered as second class matter June 2, 1948, at the Post Office at Barrington, Ill., under the act of March 3, 1879. Copyright 1956 by the Chicago Association of Commerce and Industry. Reprint permission on request. Executive and Editorial Offices: 1 North LaSalle St., Chicago, Telephone Franklin 2-7700. Neither Commerce nor The Chicago Association of Commerce and Industry sponsors or is committed to the views expressed by authors. Cover design copyrighted.

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### in this issue . . .

Once again COMMERCE pays tribute to the construction industry with a special section starting on page 22. It includes numerous pictures of the finest creative work in the building field done in the Chicago area since 1951. Each of the pieces of work shown represents a prize winner in the recent contest sponsored for the second year jointly by the Chicago Chapter, American Institute of Architects and the Chicago Association of Commerce and Industry. Honored for superior design and construction work were 49 architects, builders, building trades craftsmen, artists and building owners.

\* \* \*

Leading off in the regular feature section this month is an article (p. 11) by one of the nation's top research men, Dr. Lawrence R. Hafstad. It is an interesting report on where we stand at the beginning of the second "industrial revolution" and of what must be done for the future. Other articles tell: how to look for a better job or get a promotion (p. 13); what Chicago is doing to insure an adequate water supply for the future (p. 14); the part businessmen should play in the nation's politics (p. 18).

### Our Cover

Six buildings constructed in the Chicago area since 1951 received honor awards for excellence in architecture at the second annual Civic Pride Luncheon. One of these was the Prudential Building. Holding the award on our cover is Prudential vice president James E. Rutherford (third from left). Others participating in the program are left to right: John W. Evers, president of the Chicago Association of Commerce and Industry; Philip B. Maher, chairman of the honor awards jury; Rutherford; and George DeMent, Commissioner of Public Works for the city of Chicago. The other buildings winning honor awards were: the Elliott Chapel of the Presbyterian Home, Evanston; Highland Park High School, Highland Park; Hubbard Woods Fashion Center; National Headquarters Building of the National Congress of Parents and Teachers; and the American National Bank and Trust Company.





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# The Editor's Page

## *The World Needs More!*

In the communist verbal arsenal of half-truths and downright untruths, one is in constant use. It is that American big business is a ruthless exploiter. American big business with foreign interests, the hackneyed argument continues, represents economic imperialism in its most brutal aspect.

It's interesting to compare this charge with a set of facts concerning the Arabian American Oil Company, which is jointly owned by four leading American oil companies, Standard Oil Company of California, The Texas Company, Standard Oil Company (New Jersey), and Socony Mobil Oil Company.

Aramco — at an incredible cost in money and human effort — has developed Saudi Arabian oil resources, vital to the security of the free world, which had been untouched since time began. Its capital expenditures budget for the current year alone is \$80 million and last year it produced oil at the record rate of 965,041 barrels a day.

But this is only part of the story. Aramco has brought civilization to Saudi Arabia. It has made enormous contributions to education, to the public health, to local enterprise and agriculture. Of its 20,397 employees, 13,371 are of the Saudi nationality. Last year 11,349 individual wage increases were granted to Saudi employees, and their average annual income was more than double the 1950 rate. In addition, the company spent an amount equal to wages and salaries to provide educational, medical, housing and other benefits for its Saudi employees. A group of 10 "opportunity schools" for training these employees and fitting them for better jobs is in operation.

If this is "economic imperialism" and "capitalist exploitation," the whole world needs more of it!

## *Time for Action*

The Senate recently passed and sent to the House S3897, the so-called Kennedy-Payne bill. It is estimated this bill will save taxpayers \$4 billion a year by improving federal government budgeting and accounting procedures. The bill would implement ten of the second Hoover commission's most important recommendations for government efficiency and economy.

S3897 has three principal features which provide that, one, Congress would appropriate funds on the basis of actual anticipated spending for the next fiscal year instead of on long range obligations as is done now; two, all government accounts would be kept on an annual accrual basis to show all resources, liabilities and operating costs currently and completely; three, the budget requests of governmental

agencies would be required to be based on actual costs of specific activities, instead of broad program costs.

Currently the various agencies have about \$60 billion in appropriated but unspent funds. This fabulous hoard of spending power has accumulated under the present system which deprives Congress of any further control once it makes an appropriation.

The Kennedy-Payne bill would make it possible for Congress to tell each agency how much it could spend each year. This would permit Congress to review long range programs annually and determine which ones should be continued and in what form.

With bi-partisan support, the Kennedy-Payne bill sailed through the Senate — only to meet bi-partisan opposition in the House which has succeeded in keeping it blocked in the government operations committee.

It is inconceivable that a bill which would improve government operations, save taxpayers \$4 billion a year, has administration support, has passed the Senate and which probably would pass the House with bi-partisan support if gotten out of committee, should fail of passage. Such things have been known to happen, however, particularly when Congress is trying to rush adjournment in an election year. The one way to insure that S3897 passes is for citizens to write, wire or phone the members of the House of Representatives from their districts. Congress will be in session for only six weeks more. Action is needed now.

## *19 "Profit Minutes"*

Anyone who thinks typical businessmen devote much or most of their time to counting the profits would do well to read a report made by the National Association of Manufacturers.

The average manufacturing company, this report shows, spends most of the working day paying off the costs of doing business — materials and supplies, wages and salaries, taxes, etc. Only about 19 minutes of that eight-hour day are left in which to earn profits. And only about half of those 19 minutes result in dividends for the owners — the rest of the "profit minutes" are used for reinvestment in the business.

By contrast, wages and salaries take two hours and 19 minutes, taxes a trifle more than 43 minutes. The workers and the tax collectors do a lot better than the owners when it comes to dividing up the money business takes in.

*Alan Sturdy*





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## Here...There... and Everywhere

• **Suburban Statistics** — Suburban family units today account for only about 19 per cent of the nation's population but they receive 29 per cent of its spendable income, according to J. A. Hoban, vice president of B. F. Goodrich Tire and Equipment Company. If current projections are correct, about 40 million American families will be suburbanites by 1960, accounting for about 23 per cent of the population and a considerably larger share of our purchasing power.

• **Executive Featherbedding** — Workers and their unions normally are on the receiving end when charges of "featherbedding" are hurled. However, reports the American Institute of Management, nine out of ten companies suffer from the same condition, paying at least one member of their top echelon for unnecessary work or for no work at all. A study by the Institute of 23,000 companies shows that only ten per cent are completely free from featherbedding in management. The same proportion was also found in trade associations and non-profit foundations.

• **And All Out on Sunday** — Of every four automobiles on earth today, three are in the United States. In metropolitan Los Angeles alone, there are almost twice as many as in the whole of South America. St. Louis car population is twice that of all Japan. New York and Chicago together have as many automobiles as France and Switzerland combined.

• **Crude Rubber Losing** — Crude rubber has lost its tonnage leadership to man-made rubber in the American economy, according to William S. Richardson, president of the B. F. Goodrich Company. The change has been brought about

principally by the increasing availability of American-made rubber and continuing high prices of crude. The tree-grown material reached a high of 52 cents a pound as recently as 16 months ago, compared to less than 24 cents a pound for the principal grades of man-made rubber.

• **The A to Z of Auto Production** — Each year the automobile industry consumes 345 million pounds of cotton, 160 million pounds of wool, more than 2 million pounds of nylon, and several million square feet of leather. In addition, great quantities of sisal from Mexico, jute from Pakistan and mohair sheared from a special breed of goats in Turkey and South Africa are used. In using everything from abrasives to zinc, the industry buys something from every continent and almost every country in the world.

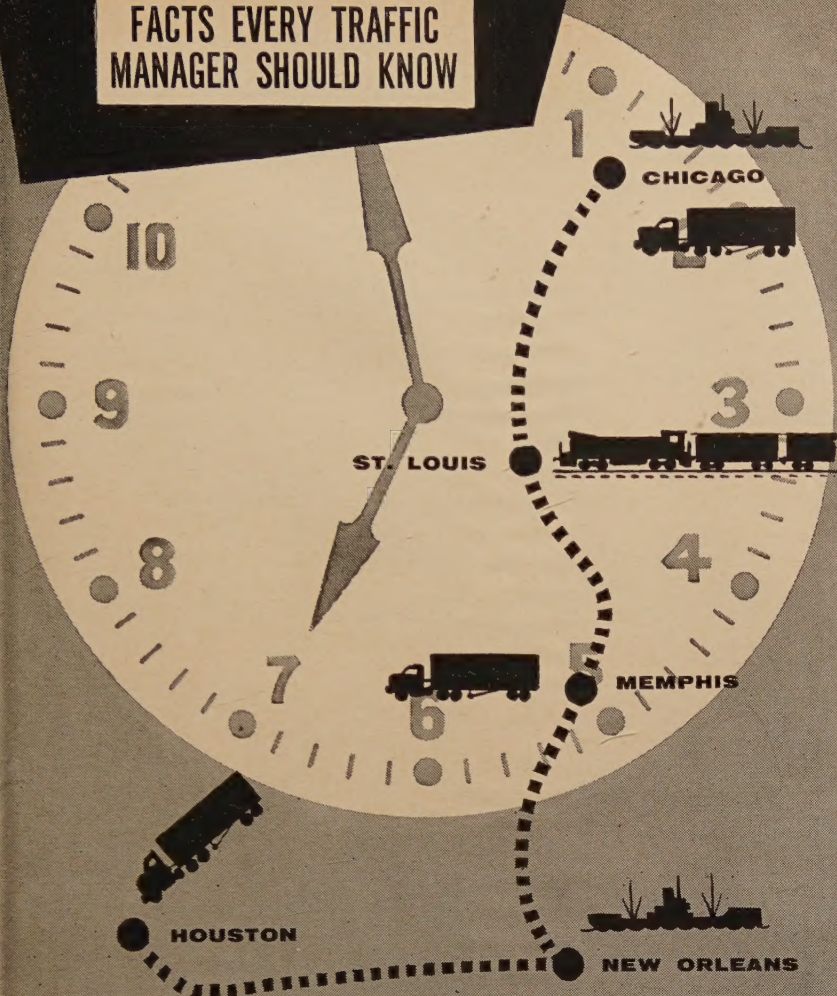
• **Traffic Death Claims** — Motor vehicle fatalities in 1955 resulted in 42,000 life insurance death claims, representing aggregate death payments of \$90 million the Institute of Life Insurance reports. This was 3,000 more claims and \$15 million more in benefits than was paid in 1954.

• **Underseas Telephone** — Underwater telephone cable soon will cross the Atlantic ocean for the first time, a joint effort of American Telephone and Telegraph, the British postoffice, and the Canadian Overseas Telecommunications Corporation. Cable, which actually will be two one-way cables about 20 miles apart, will connect Oban, Scotland, and Clarenville, Newfoundland, a distance of 1,950 nautical miles. Previous cables, dating back almost 100 years, have carried only telegraph signals. Transatlantic telephony has

(Continued on page 83)



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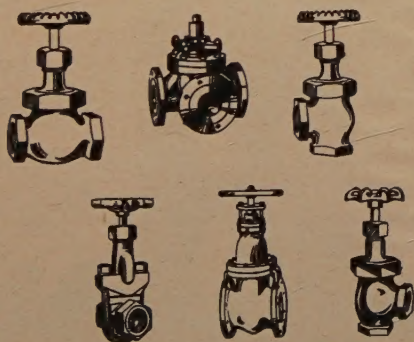
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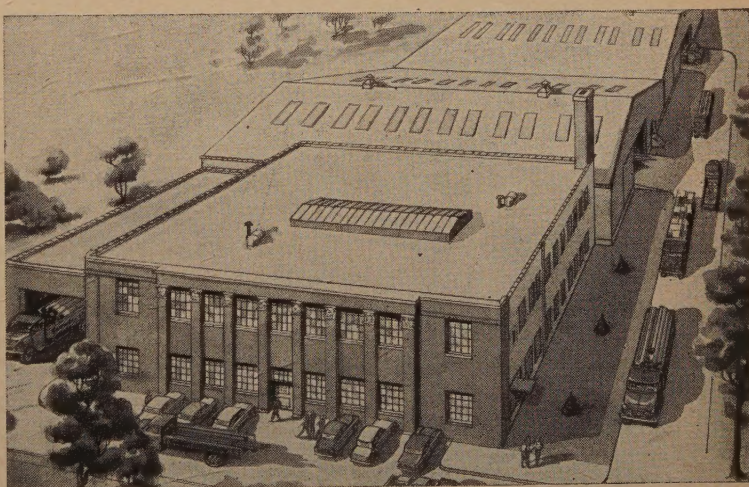
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# Where Is Technology Leading Us?

By DR. LAWRENCE R. HAFSTAD

**Does anyone know enough about the long-range operation  
of an industrialized society to forecast our future?**

SCIENTISTS describing their work are invariably asked, "Of what use is it to me?" This is the inevitable question. Here is where applied science and engineering, or for short "technology," comes in. From basic research we learn what nature will and will not permit us to do.

Nature cannot be coerced, but with cooperation she has proven lavish with her gifts. The invention of agriculture, the invention of tools, the first use of fire, the age of copper, the age of iron, the invention of the wheel, the invention of printing, the steam engine, electricity, internal combustion engines, radio, aeroplanes, television, atomic energy, guided missiles, and now looking toward the future, even earth satellites, and space ships — the very listing of these achievements of technology indicates both the generosity of nature and the breathless acceleration of the pace of invention. Where will it all end? Why should it end at all? Nature is infinite — infinite

beyond the comprehension of man.

But just where is all this technology and industrial progress taking us? Does anyone know enough about the long-range operation of an industrialized society to forecast precisely the future of this very recent innovation? As of the present moment—the honest answer must be "No," and this is the basis of the fears of the pessimists.

## *An Optimistic View*

On the brighter side, however, is the fact that our industrialized society will almost unavoidably increase leisure and with it the opportunity for study and contemplation. It may therefore be hoped, that with proper distribution of this new leisure there may come understanding of our admittedly difficult social problems. We need, in other words, the development of an entirely new discipline, one which has been called "technological humanism." This, then, is the reason for optimism; technology based on research is the sine qua non of a continuing industrial expansion, but this industrial expansion itself provides the leisure for more research and more technology, and, above all, more contemplation, more understanding and more wisdom.

To me, our continuing technological revolution is in many respects

surprisingly like the atomic chain reactions. In both cases there is now reason for optimism because we begin to feel that we have these seemingly limitless forces under control, and therefore disposable in our service. In modern technology mankind has at its disposal a tool so powerful, and so infinitely variable and responsive, that as engineers we can face with equanimity the fantastic task of upgrading the living standards of the entire world.

For the United States and for the immediate future the prospects are bright indeed. We have over the years accumulated the capital represented by our physical plant and equipment which has enabled us to reach "criticality," the point where a reaction is self-sustaining. We have further had a century of experience with large scale industry and its problems. But most important of all, we in the United States have a new feature, a strictly American invention — the provision of continually increasing purchasing power for the consumer. Our potential market is large enough to permit manufacturing operations on such a large scale that costs can be reduced by a really significant amount. This cost saving, which we can call the "Technological Gain," is of such magnitude that under our system it has proved to be sufficient to provide both additional

The author is a vice president of General Motors Corporation and director of GM's research staff. This article is adapted from his address at the dedication ceremonies of General Motors' new technical center, Warren, Michigan.

◀ This 22-acre artificial lake and 132-foot stainless steel water tower are part of the new 320-acre GM technical center.





Technicians in General Motors research staff's industrial hygiene department work beneath luminous ceilings which provide shadowless lighting. This is a typical view of the laboratory facilities at GM technical center



In one minute over 1,000 gallons of water swirl over this large flow table. From studies of flow patterns, GM engineers determine the best shapes for turbine blade designs in automatic transmissions and torque converters for cars, trucks and buses



One of the special purpose structures at GM center is this gas turbine research building. Exhaust stacks are connected with seven test cells used for both automotive and aircraft turbines. In foreground is an experimental turbine-powered bus

"purchasing power" to the consumer and additional "incentive" for more production.

It is important to note that this technological gain is just as basic to a socialistic economic chain reaction as to a capitalistic one. Under neither system can the distribution of benefits exceed the increment or dividend without stopping the chain reaction. This is important to emphasize for the benefit of those who have been misled to believe that a socialistic society can, contrary to all the laws of nature, miraculously produce "something for nothing."

### *The American Formula*

The remarkable and long continued economic well-being of the United States, reflected in the prosperity of the whole Western world, seems in large measure due to the presence in the American formula of proper relative amounts of "incentive" and "consumer purchasing power." Thus the chain reaction of progress remains sustained. These facts have not been lost on students in the U.S.S.R. As early as 1948 Vargas, the Russian economist, pointed out that the United States economy had developed into a modified capitalism which avoided the extreme business cycle oscillations predicted by Marx. This was considered heresy and under Stalin he was forced to recant. But Vargas and his students survived. Today we know that there are many in the U.S.S.R. who accepted the Stalin dogma with tongue in cheek.

The increasingly wide spread in salaries between worker and technical expert in the U.S.S.R. indicates that the Russians themselves now are beginning to recognize the extreme importance of the "incentive" factor. Much of their recent remarkable industrial progress is no doubt due to this fact. We find ourselves in a race with the U.S.S.R. for continuing technological supremacy. In this race, how do we stand in regard to the education of the large numbers of engineers, scientists, economists, and managers our society will need? Here are some unpalatable facts. In Russia all elementary students take mathematics and basic science courses. Those with special aptitudes are given every encouragement to proceed to advanced study. Laggards are promptly eliminated

(Continued on page 69)



# Pick Your Job and Land It

There are four basic rules to follow if you are looking for a new job or a promotion

By **RICHARD D. GLEASON**

**S**ECRETARIES do far better at landing the jobs they want than do their bosses. Since most management executives seeking work are doing so for the first time in their careers, it is an unfamiliar experience. But not so to their secretaries, who have changed jobs often enough to know the ropes.

These experienced job hunters follow four basic steps to improve their position in the business world. The steps apply whether they want a new position in another company or a promotion at their present place of employment. Step one is to pick the job desired. Step two is to analyze the requirements of the job and the factors in one's background and experience which qualify him for that job. Step three is to prepare a sales campaign. The fourth step is this "pick your job and land it" philosophy is to conduct the campaign and land the job.

## Locate Hidden Assets

Executives on the move often find themselves in awkward, uncomfortable situations which strain their tact, good nature and patience to the utmost. More to the point, after enduring such an experience, the executive still may not land the right job for himself. Many have the mistaken idea that they have little or nothing to offer. Actually there are hidden assets in every man's background which can contribute to a favorable result.

Take the case of Ed Hayes. He

and his brother had started an automotive parts distributorship. The brother had the major capital investment and after nine years decided to sell. Ed was panic stricken. He saw himself as a small town operator of an unusual business with no chance of relocating at age 45.

Ed had built the business from nothing to nearly two million dollars annual volume. He had traveled four counties intensively himself until he sold enough to support eight men whom he then managed. Also, in many instances he sold major brand manufacturers on letting his outfit carry their lines. In addition, he had managed the financial side of the business, forecasted sales, did a large part of the purchasing, and set quotas. Yet he thought he hadn't done anything and didn't have anything to offer. The truth is he just hadn't analyzed himself adequately. Now he is general sales manager for an automotive parts manufacturer, thrilled with what he calls his "new found skills," and getting more money than his brother ever paid him.

There is an old theorem in mathematics that "the total is equal to the sum of the parts." This is also true in job hunting. If one proves he can do each of the parts, he can prove he can do the whole job even though he may never have done it before. This is a particularly effective method to use to get a better job. For example, suppose an assistant sales manager who has never been a sales manager wants to get the higher position. Suppose, also, he can prove everything except managing a sales force. Then he must

look to other areas. Has he ever been a leader of any activity resembling sales like a community chest drive or a church fund raising campaign? Ever handled teams selling anything while in high school or college? Ever take over while the boss was on trips or a vacation? Any one of these activities could help considerably in rounding out his background for the higher position.

In the preparation of the sales campaign there are four fundamental policies that should be followed: the applicant should offer a service instead of asking for a job; an appeal to the self-interest of the prospective employer should be made; the job desired and the applicant's qualifications for the position should be specific; and every statement of ability should be backed up with evidence.

## The Best Approach

The applicant who sells himself best uses letters of endorsement, charts and graphs, official statements, annual reports, newspaper clippings, anything that will prove his point. If a point can't be proven and there's any doubt about it, it's better left out.

There are two types of letters used in job hunting, the "shot gun" and the "rifle" letters. The shot gun letter is a general letter. It goes out like the pellets of a shot to a broad, general target. In this a service is offered in as specific a way as can be done in a general letter. After prospects are found, they are sent the rifle letter, "rifled to a single

(Continued on page 78)





General view from Navy Pier of dam site for new filtration plant

## *Chicago Expands Its Water Supply*

City will spend \$150 million in next five years to increase its supply of water for growing population

**By PHIL HIRSCH**

**J**UST about every summer, a certain number of Chicago area residents have trouble getting enough water to sprinkle their lawns, bathe, or wash the dishes. Casting a covetous eye at Lake Michigan's vast blue expanse, they probably feel like paraphrasing the Ancient Mariner: "Water, water everywhere, and not enough to drink."

To keep this complaint from growing louder, and possibly to silence it altogether, Chicago's nearly four million citizens will spend some \$150 million during the next five years for additional water mains, pumping stations, filtration and storage facilities throughout the length and breadth of the city. This is a

lot of money, admittedly, but when you realize what it's buying, the investment seems more than justified.

The central fact about Chicago's water system is that it is threatening to run dry—not in the lake, of course, but at the myriad faucets and other outlets where water goes to work. Last summer, there was one hour when the city pumped 74.5 million gallons from the lake. This was 73 per cent more water than was consumed during an average hour in 1955. More important, the city's water distribution plant was operating at just about its maximum capacity during this period.

That we'll need more water, though, is dramatically evident from

a brief look at a few more statistics. In 1936, the most water the city pumped in any hour of the year was about 56.9 million gallons; thus, last summer's figure represents an increase of more than 31 per cent in a period of 20 years. City water engineers consider this growth in peak hour consumption a pretty good indication that further increases are inevitable, and an increase in plant capacity mandatory.

Additional evidence that Chicago's existing water distribution plant has to be enlarged comes from a recent study made by the waterworks engineering firm of Alvord, Burdick, and Howson. The study fills a couple of hundred pages, but perhaps its most important conclusion is sum-



summarized in the following statistic: By 1980, the Chicago water system will have to be capable of pumping 1,400 million gallons of water a day, approximately 35 per cent more than was pumped during the peak day of 1955.

There are three main reasons the load on Chicago's water distribution system is expected to increase during the next 25 years:

First, the population of the city proper will probably grow appreciably. The ABH study estimated that the 3.84 million people living within Chicago's corporate limits in 1955 would increase to 3.9 million by 1960, 4.1 million by 1970, and 4.5 million by 1980.

In 1955, the most water consumed in a 24-hour period, known as "maximum day" pumpage, was approximately 1,350 million gallons. This was for the city proper and did not include 51 outlying suburbs which purchase their water from the city. By 1980, due to population growth, maximum day pumpage for corporate Chicago is expected to hit 1,760 million gallons.

### Suburban Increases

Meanwhile, population in the 51 suburbs is expected to increase from 866,000 (1953 figure) to 834,000 by 1980. Overall, the experts believe maximum day water demands of all the communities now served by the Chicago system (including Chicago) will increase from the 1955 figure of 1,513 million gallons to 2,090 million gallons in 1980.

This is only part of the story, however. Thirty-four more communities will want to buy water from Chicago during the next 25 years, says the ABH survey. These communities now obtain water on their own from underground wells, but increasing population and industry, among other factors, are making the water table drop. Well water is becoming scarce and expensive. Between now and 1980, it should become more economical for the 34 suburbs to tap Chicago mains than to dig deeper into the ground.

The study estimates that the extra load created by these new users will boost Chicago's maximum day pumpage (city and suburbs) to about 2,217 million gallons, approximately 46 per cent above the maximum day total pumped in 1955.

The trend of recent years toward air conditioning units, garbage disposals, automatic washing machines, and similar gadgets has been a major factor responsible for increasing per capita consumption. Take air conditioners, which use approximately 2,000 gallons a day for each ton of refrigerating capacity. In 1932, all the units installed in the city had a capacity of less than 25,000 tons. By 1947, the figure had jumped to 100,000 tons, and in 1954 reached 210,000 tons.

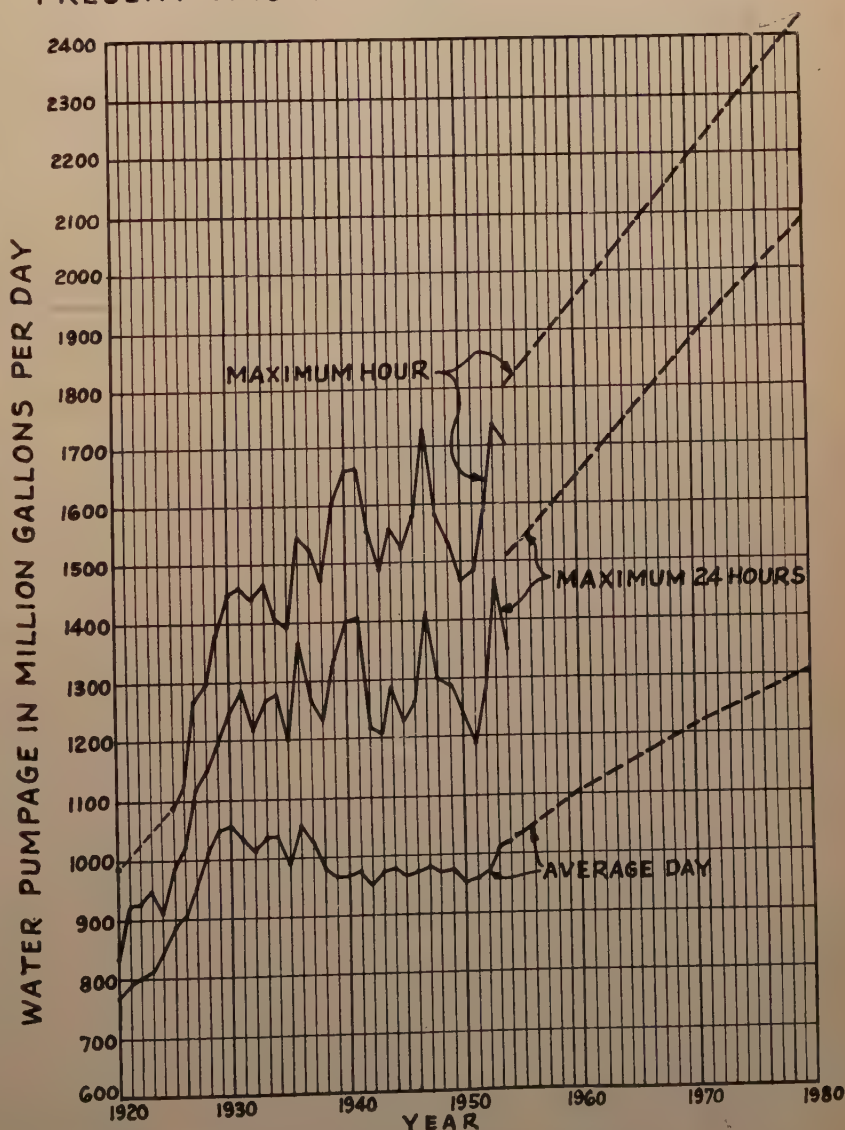
Industry also has been growing at a furious pace. If you lump the water pumped for both industrial and domestic needs within the city in 1950, the total averages out to 243 gallons per capita per day. By 1980, it is estimated that this per capita figure will be 262 gallons.

In a way, the taxpayers are getting off easy despite the fact that they'll have to pledge \$154 million during the next five years to prepare for this increased water load. A major reason the figure isn't higher is the city's leak detection program. The program, underway for some 25 years, currently is preventing about 14 million gallons of water a day from being lost. It costs the city around \$400,000 to increase water pumping capacity one million gallons a day. Therefore, the leak detection program represents the equivalent of some \$7 million in plant investment.

A concrete or cast iron water pipe may look like a pretty sturdy object, but when you remember it has to

(Continued on page 84)

**TOTAL PUMPAGE BY CITY OF CHICAGO  
PRESENT CHICAGO WATER SERVICE AREA ONLY**





# Business Highlights



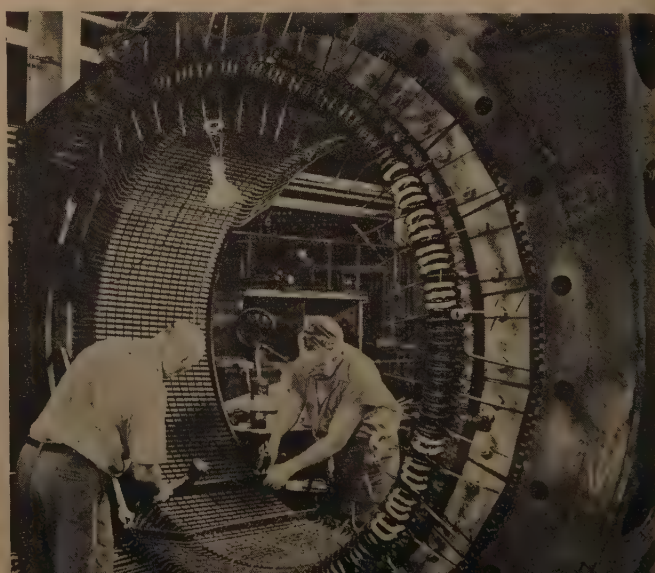
Representatives of 50 foreign countries arriving in Fort Madison, Iowa, for Sheaffer Pen Company's export convention were greeted by this signpost, showing distances to their native lands. Left, Sati Dalamal of Bombay points out the distance from the Mississippi river-town to her hometown



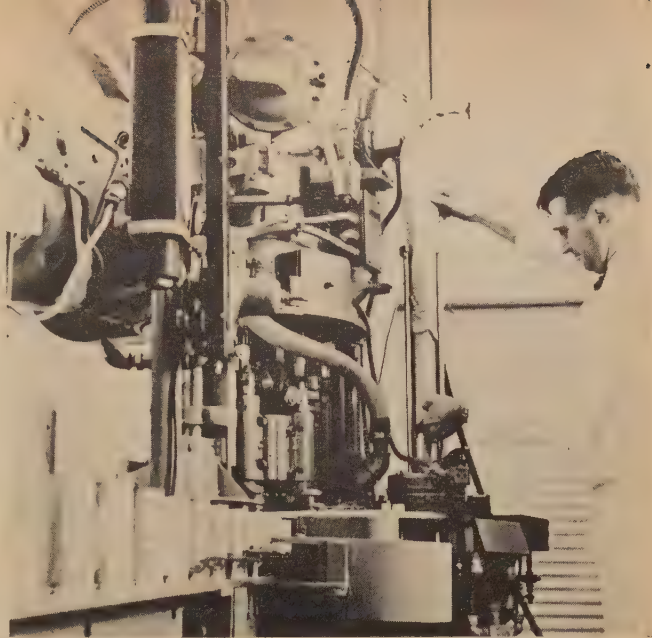
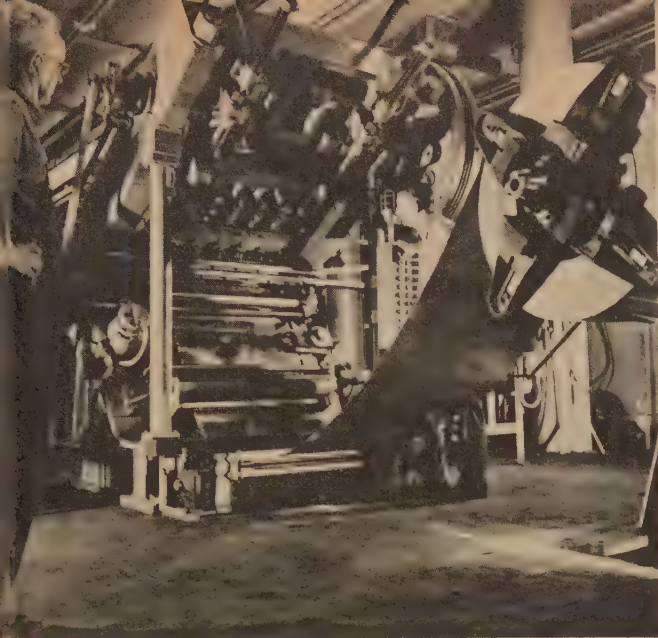
Dockside view of The Glidden Company's new 6,500,000-bushel terminal grain elevator on the Calumet River in South Chicago. Each of the two unloading legs can remove 20,000 bushels of grain per hour from lake vessels and barges which service the elevator. Five loading spouts on same side of elevator can fill a 300,000-bushel vessel in five hours

An estimated 16,000 customers, suppliers, employees and their families, and neighbors toured the Joseph T. Ryerson & Son, Inc., steel service plant during the firm's three-day open house. Refreshments and dinner were served to all who attended in a tent 90 by 422 feet. Below, talking to three unidentified visitors are Charles L. Hardy, Ryerson president (third from left) and Thomas Z. Hayward, vice president (at right). The event was said to be the largest of its kind ever attempted by any company in the Chicago area

General Electric Company is now offering Chicago area companies an eight-hour repair service on electric motors up through 50 horsepower on a semi-automated production line just installed at its apparatus service shop. The new line cuts repair time down from 19 hours formerly required on a special order basis. The shop will also continue to service all sizes of electric motors but not in eight hours. It took eight days of around-the-clock work for GE specialist to rewind and completely service this 18-ton stator from a 4500 horsepower motor (below)







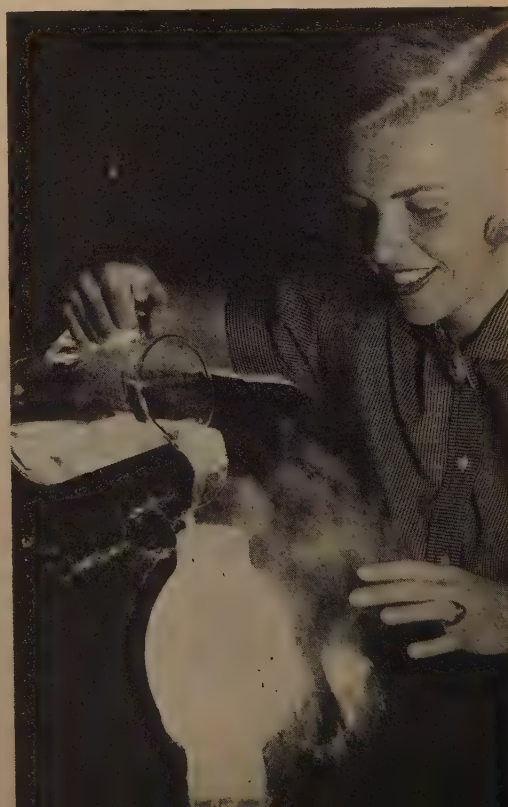
Above, left, a Callahan Gang Die Press, part of the equipment in Continental Can Company's new \$7 million laboratory for research and engineering in Chicago. This machine utilizes coils of steel at high speed, instead of sheet stock in the manufacture of can ends. Above, right, an engineer checks the performance of a double seamer to determine correct specifications. The new laboratory includes more than 260,000 square feet of floor space. By the end of 1956, 600 people will be employed, about half of them will be scientists and engineers

One hundred years ago this month, the Illinois Central Railroad inaugurated Chicago's first suburban train service. It was the first such train service west of Philadelphia at the time and ran six miles from downtown to Hyde Park, four times daily. By 1900, the IC ran about 110 weekday trains, like the ones right, to Hyde Park. Today the line has 135 weekday trains from Chicago to South Side points



These huge, stainless steel storage tanks (left) are a part of the handling operation at the A. E. Staley Manufacturing Company's new Chicago distribution center. Syrup stored in these tanks is received by tank car and can be piped out into tank trucks or barrels

You'd probably "steam" these days too if someone poured a pitcher of ice water on you. That's what the new weather-proof mercury lamp developed by Westinghouse is doing (right). The bulb has an outer cover that resists breakage under these conditions.





By

**JOHN S. COLEMAN**

ONCE again this year the American people will go to the polls to make the most important single decision for the next four years. Indeed it is more than a single decision, for in electing the President a man is chosen whose views, judgment and personality will be the crucial factor in all major political decisions. All businessmen should be deeply concerned in the choice that is made.

As the pace of the campaign increases, businessmen will give their time and money in the interests of their candidate. Throughout the country, party committees will be well sprinkled with business names. In campaign fund drives, business support will be eagerly sought. We can be sure, in short, that the leaders of commerce and industry are going to be in politics this year.

I view this with some alarm. I have been teetering on the verge of the political abyss for the past two years and am not looking for any further involvement. Yet we cannot escape political responsibility. The stakes are too large for us to enjoy the luxury of being spectators. What interests me in my own experience, however, is this curious paradox. Though businessmen raise money, are active in party affairs, and are at the head of campaign committees, they have but a small influence on political trends in America.

Businessmen don't like politics. They regard it as a necessary evil.

The author is president of Burroughs Corporation.



John S. Coleman

## What is the Businessman's Role in an Election Year?

Does management have political responsibility?

They participate, but they do so under protest. They are stirred to action only by the initiative of others. And though this is in a world of change, their immediate response may likely be to defend the status quo. In business, however, as in politics, there is no future in the status quo.

It is often said that science has remade the world. Certainly this is true, but most people will agree it has done so with the aid of business. Scientists have discovered the means; businessmen have exploited them.

In a real sense management has organized first the steam, then the electric, and now the electronic and atomic age. We have not, however, always been alert to the secondary effects of our work.

We have not noticed the political changes we were thus bringing about. One hundred and sixty million people in movement, growing in numbers, moving restlessly across the continent, growing to mature leadership of the free world. This changing face of America presents

(Continued on page 72)



# New Type Freight Cars Speed Loading

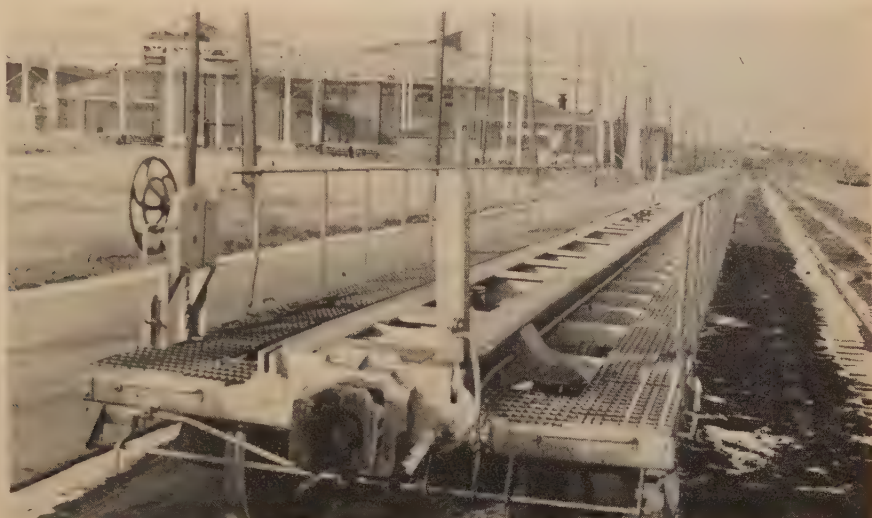
Revolutionary new designs will help railroads keep stock moving

**D**URING the past several years, railroaders have become increasingly aware of the fact that the conventional freight car spends too much time standing still. There are a myriad number of reasons for this situation, but all of them boil down to higher operating costs for rail lines, higher freight bills for shippers, and chronic equipment shortages that produce ulcers in both camps. Early this year, two new freight cars were unveiled which should do much to alleviate the problem.

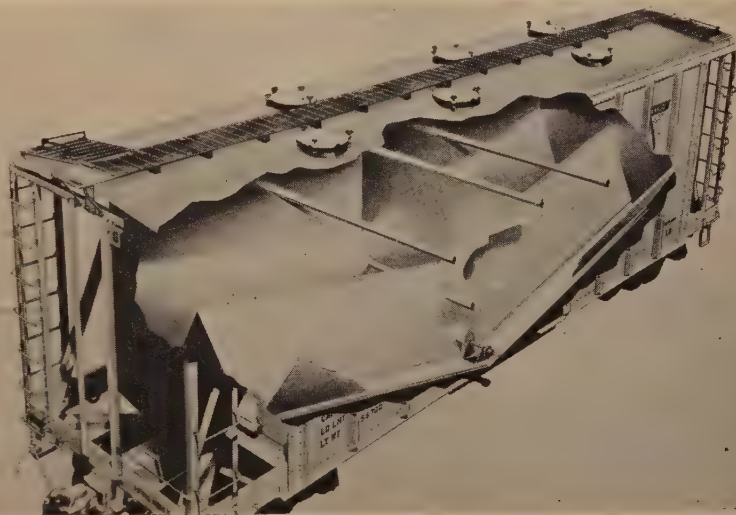
One is a flatcar, developed by ACF Industries, which can be converted into box car, tank car, refrigerator car, hopper or gondola car. The changes are made with detachable compartments placed on the flatcar by a fork lift truck and then bolted down. ACF calls its invention the "Adapto" car, and says it's the first successful example of a freight car able to handle every shipping requirement. Rock Island Lines and Trailer-Train Company — a supplier of cars for piggyback freight movements — apparently agree. The former firm has ordered 10 Adapto cars, the latter 1,000.

## Lack Logic

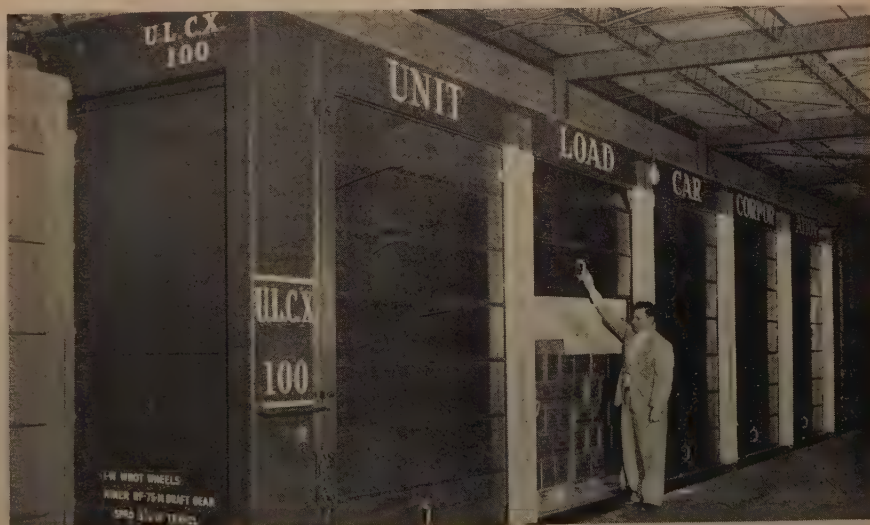
There is a certain lack of logic in the way conventional freight cars are loaded and unloaded. Not only is the storage container tied up, but the wheels and substructure as well, even though the latter add nothing to the efficiency of either operation. Since the Adapto car contains removable compartments, it offers railroads the chance to get substantially more work out of their car frames. During the time a conventional freight car is tied up at one



The "Piggyback" car, a new type of flat car specifically designed to accommodate truck trailers, is being produced by Pullman-Standard



Cutaway view of "Airslide" car, built by GATX, shows novel fabric unloading belts in foreground. Air shoots up from beneath these belts and loosens the load



The "Unit Load" car, built by Unit Load Corporation, has five doors on each side of the car instead of the conventional one. It can be unloaded in ten minutes



shipper's dock, an Adapto car can handle two or more loads.

ACF's new entry should also reduce a problem peculiar to shippers located in heavily industrialized areas. Freight cars may spend a day or more working their way through the maze of switch tracks that surround a city like Chicago before reaching the customer's siding. With the Adapto car, it is possible to unload at the outskirts and ship the containers the rest of the way on the back of a truck, reducing the overall transit time of the shipment substantially.

### ***Different Approach***

While the Adapto car was undergoing development, Unit Load Car Corporation, Chicago, Illinois, was attacking somewhat the same problem from a different direction. Unit Load Car's engineers reasoned that if the loading and unloading time of the conventional freight car could be reduced, the number of car-miles traveled could be increased, and both the railroads and their customers would be benefited. The result was the "Unit-Load" car, which has five doors on each side instead of the conventional one.

The big benefit of this arrangement is that it replaces the human "daisy chain" with lift trucks; the car can be emptied a palletload at a time, instead of one or two boxes at a time.

A few months ago, the Unit Load Car Corporation graphically dem-

onstrated the difference between the two material handling systems. Two lift trucks emptied a Unit-Load car in ten minutes. To unload a conventional box car, which has the same freight-carrying capacity, takes around ten man-hours via daisy chain.

### ***Under Construction***

Three thousand Unit-Load cars are now under construction; they'll be sold and leased to railroads and private shippers. Officials of Unit-Load expect chief users to come from the food industry, brewing, petroleum, glass, and appliance manufacturing.

What Unit Load Car has done for boxcar users, General American Transportation Corporation did, about three years ago, for hopper car users.

A chronic headache in shipping dry bulk commodities via hopper car is that they tend to pack down in transit. After riding the rails for a few hundred miles, a load of crushed phosphate, for example, may become so hard you can stand on it without leaving a footprint. Getting such material out of the car is quite a lengthy, cost-consuming undertaking. But GATX's "Airslide" car eliminates the trouble with the aid of a unique aeration technique. When the shipment reaches its destination, air is blown mechanically into a chamber in the bottom of the car, and from here up through the load. This treatment "fluidizes" the

loading causing it to flow out of the car on a fabric belt.

The Airslide car also eliminates the need for bagging many materials. Traditionally, sugar, for example, has been bagged mainly to facilitate handling at transportation, storage, and use points, also to guard against contamination. The Airslide car's aeration system solves the first problem. In addition, the car's inlet and outlet hatches are specially designed to prevent contamination. As a result shippers of foodstuffs, among other dry bulk commodities, have been able to dispense with bags and cut costs an average of 25 cents per hundred pounds in the process.

About 60 industrial concerns currently are operating Airslide cars or have them on order. Some 1,200 of the cars are in service, and another 800 are scheduled to be delivered by the third quarter of 1957.

### ***Flat Car for Trailers***

Piggyback, in itself an attempt cut freight handling costs and delays, also has been affected by the new look in freight cars. A few months ago, a new type of flat car specifically designed to accommodate truck trailers, was brought over from France and test-demonstrated here. Dubbed the "Piggyback" car, it reportedly will cut trailer-on-flat-car loading time from the present six minutes to one minute per trailer, and trim terminal costs 30 to 50 per cent. Pullman-Standard currently is building 550 of the new units for U. S. rail carriers and piggyback car pool owners.

Big difference between the piggyback car and a conventional flat car is that the former requires less manual labor to tie a trailer down. Instead of employing hand-operated jacks and towlines, the piggyback car is equipped with semiautomatic clamps that provide a secure connection between the truck axle and the bed of the car. Also, a string of piggyback cars can be end-loaded, eliminating the higher costs generated when conventional flat cars are loaded separately.

Besides cutting loading time, all of the new freight cars carry less dead weight. The Adapto car, for example, has a load limit to net weight ratio of three to one; for a conventional car, the ratio is approx-

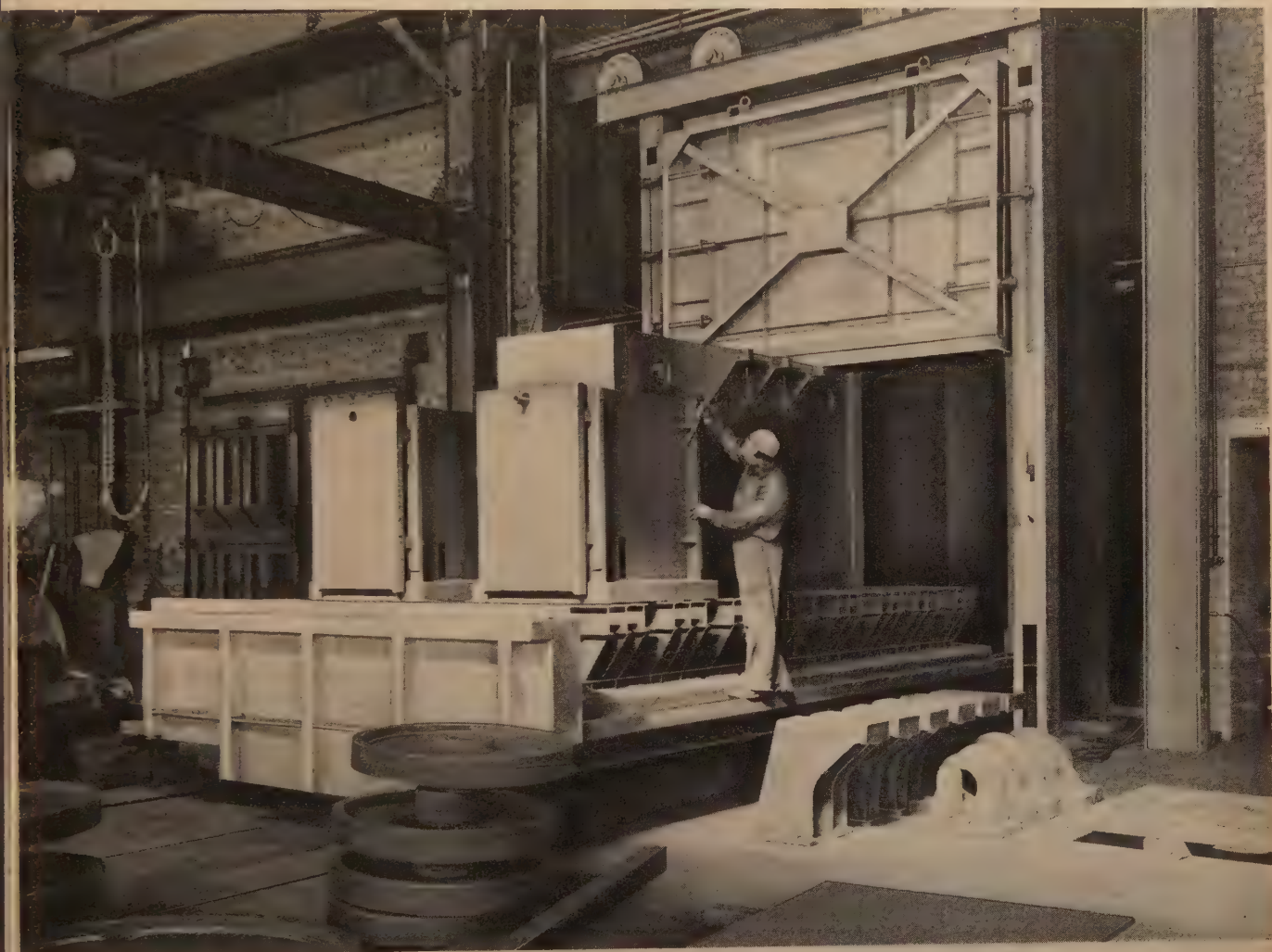
(Continued on page 83)



ACF's "Adapto" car can be converted into box car, tank car, refrigerator car, hopper or gondola by changing its detachable compartments



# GAS AT WORK for Chicago's Industry



Large car-type stress relieving furnace fired with gas recently installed at the Verson Allsteel Press Company, 1355 E. 93d Street, Chicago, Illinois.

One of the top manufacturers of metal working presses in this country is the Verson Allsteel Press Company, whose main plant occupies 25 acres in the Burnside section of Chicago's south side. A second plant is located in Dallas, Texas.

Verson originated the all steel press frame and this method of construction is now the accepted standard for high strength. Gas is a factor in the fabrication of these big presses as it is used for stress relieving and for cutting thick steel plate.

**THE PEOPLES GAS LIGHT AND COKE COMPANY**



# Architecture and Building Work Honored

**S**UPERIOR design and construction were recognized in awards received by 49 Chicago Metropolitan area architects, builders, building trades craftsmen, artists and building owners on June 7 at the city's second annual Civic Pride Luncheon sponsored jointly by the Chicago Chapter of the American Institute of Architects and the Chicago Association of Commerce and Industry.

Six honor awards were given for buildings and three for craftsmanship and related fine arts. Eleven citations of merit were awarded. In all there were seven classifications for the awards. These included public buildings, institutional buildings, commercial buildings, industrial buildings, miscellaneous buildings and a special category. The special category covered the awards for the creative work in fine arts, superior craftsmanship in the building trades allied to architecture and an award to Chicago for parking facilities.

Pictures of each of the winning buildings and examples of the work of the other winners are presented in this special section of **COMMERCE**.

Andrew Heiskell, publisher of Life Magazine and Chairman of the American Council to Improve our Neighborhoods, was the principal luncheon speaker. His address is reproduced beginning on the next page. Below are the introductory remarks of George H. Dovenmuehle, chairman of the Urban Renewal Committee of the Chicago Association of Commerce and Industry.

Entries in the contest were limited to structures completed within the last five years and located within a 50 mile radius of Chicago. The awards were presented at the luncheon by Samuel Lichtmann, president of the Chicago Chapter of the American Institute of Architects, and Philip Maher, chairman of the awards jury. The members of the awards jury were: architects Philip Maher, R. Rea Esgar and Edwin H. Mittelbush, representing the Chicago chapter of the architects association; and Graham Aldis, president, Aldis and Company, and Edward C. Logelin, vice president, U. S. Steel Corporation, representing the association of commerce and industry.



Samuel Lichtmann points out photo of prize-winning Prudential building to (left to right) Andrew Heiskell and George Dovenmuehle



Speaker's table at second annual civic pride luncheon

## Creating Monuments To Progress

**By**

**GEORGE DOVENMUEHLE**

**T**HROUGHOUT the history of civilization, and even back into the very dawn of creation, mankind's heritage, his deeds, his way of life, have been most accurately recorded for posterity through his buildings — buildings that satisfy not only the basic need for shelter but which reflect also an innate desire for creative expression. Through the ages our greatest historians have been the architects, the builders, and the craftsmen whose achievements have served as monuments to Man's progress, to his heroes, and to his technical evolution.

Here in Chicago, we are following closely that historical pattern — for, today, our unprecedented standard of living, our esthetic tastes and our constant progress are nowhere better evidenced than in the architectural achievements of our times.

It is fitting, therefore, that we pay tribute to these men of vision who translate today's ideas into tomorrow's realities. It is they whose monuments to progress will serve not only to create the new Chicago, but will best express, for generations to come, this way of life that we know and cherish today.





Andrew Heiskell

## The City and the Citizen

**By ANDREW HEISKELL**

IT IS good to be in Chicago again. And because of your efforts to renew this city it will be true for years for myself and all visitors to say, "This is an exciting city — a city that has pride in its future." It is good to see the work underway and the plans in making. It is staggering to think of the work yet to be done.

I hope you will not only persevere in your efforts but intensify them. For Chicago not only has to save itself, as it appears to be doing, from the decay of urbanization, but it can and should be an example to all other metropolitan areas of this nation. In making the foregoing statement I am not simply attempting to unleash your civic pride. Rather I am suggesting if the businessmen of the nation believe in those rosy 1965 projections you first had better make sure that the environment and climate in 1965 is conducive to supporting the bulging economy you foresee. And this means our cities must be reborn because the future of all of us

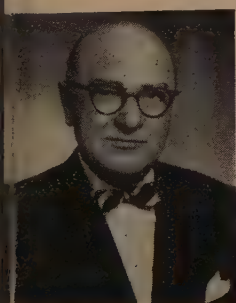
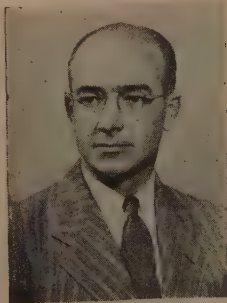
and the future of American business lies in the future of American cities.

In the metropolitan areas of our country live over two thirds of our population. More than half of the nation's wealth is entombed in the real estate values of 168 major cities. Seventy-five per cent of all our manufacturing and selling activity last year took place in these same urban centers. Nearly 75 per cent of new homes were built in those same areas. Of the \$300 billion plus national income in 1953, 93 per cent was the result of urban activity.

Ours is an economy of the city, and our future depends on the continued successful operation and growth of the cities. Because there is no question that they will grow it is only a matter of whether it will be a healthy growth or a malignant growth.

*(Continued on page 49)*

### *Members of the Award Jury*

Philip B. Maher,  
Chairman

R. Rea Esgar



Graham Aldis



Edwin H. Mittelbush



Edward C. Logelin



# "Chicago Style" Develops New Techniques

By JUNE BLYTHE

IN THE office bookcase of Verne O. McClurg, one of Chicago's many distinguished and venerable engineers, sits a worn, dusty textbook, an Encyclopedia of Civil Engineering published in 1847. Carefully turning the brittle pages, McClurg points to the frequent mention of an ancient Roman name, Marcus Vitruvius Pollio, and the illustrations of this early builder's construction theories — arches, vaults and domes.

"Only a hundred years ago, Vitruvius was the authority on architectural engineering," explains McClurg. "It took twenty centuries to achieve any fundamental changes in construction, and most of those changes took place right here in Chicago within a span of two decades!"

After two thousand years of structures built chiefly on the discoveries of ancient Greece and Rome, the genius of Chicago builders changed the face of the world's cities within a single generation.

Since the 1880's Chicago architects, engineers and contractors have been called to every large city in America and many abroad. "Chicago style" skyscrapers characterize the modern world as Vitruvius' bridges and archways epitomized the old.

## *Skeleton Construction*

The Chicago genesis of skeleton construction and the towering structures it made possible stimulated, too, the growth of a great building materials industry in this area. When William LeBaron Jenney pushed his Home Insurance Building toward the sky in 1885, for the first time hanging the weight of walls on a metal frame, he opened a new era in the technology as well as the architecture of building.

Such Chicago area giants as United States Steel Corporation, Inland Steel Company, U. S. Gypsum Company, and the Marquette and Universal Atlas Cement companies owe as much to Jenney and his contemporaries as to their own farsighted founders. Today, thousands of different items in varying materials are required to erect and equip modern

buildings, and all except structural glass flow in major quantities from the Chicago area.

There is, in fact, little in Chicago's history which has not been profoundly affected by its versatile builders. The city's first architect, John Mills Van Osdel, built the first grain boats on Goose Island in 1837. A year later he erected the first north-branch bridge across the Chicago River, and at about the same time became the first Chicagoan to receive a United States patent for pumps he designed to aid the engineers of the Illinois and Michigan canal! A model of the first grain elevator, which he designed for the Newberry and Dole warehouse in 1842, sits today in the Board of Trade Building.

Some historians credit Van Osdel with the fact of Chicago's survival. When he was brought here to build a home for Chicago's first mayor, William B. Ogden, the architect found a swampy and discouraging terrain. Flat blue clay, impervious to water, underlay a three or four foot layer of quicksand topped by about a foot of black loam. Holes dug into the clay promptly filled with water; basements could not be excavated, even if made watertight, because of upward hydraulic pressure. The absence of natural drainage created chronic health and sanitation problems that were to plague the new city for many decades.

## *The First Challenge*

But the obstacles flung by nature at Chicago's audacious builders served to spark their ingenuity. The first challenge to the stubborn clay was George Washington Snow's "balloon framing," a light, inexpensive wood construction easily supported on pine posts driven down to the clay. Invented in 1837, the same year Van Osdel arrived in Chicago, balloon framing proffered quick housing for the multitudes soon to crowd the city, and spread rapidly across

the nation. To this day, balloon framing remains the most widely used method of home construction.

The second and more basic guarantee of Chicago's future lay in Van Osdel's insistent work toward raising the city's grade, for his influence in civic affairs proved indispensable to the public acceptance and success of this herculean task. In 1844 he had been urged by civic leaders and builders to establish an architect's office and make Chicago his permanent residence. Among the many structures he designed was the new City Hall, and he was a fellow-pillar of the Baptist Church and close personal friend to Mayor Levi D. Boone, a physician.

## *Need Sanitary Facilities*

By 1850, lack of drainage and sanitation produced a cholera rate of 48 to 50 per thousand in the city's thirty thousand population. Sanitary facilities had to be built above ground and fenced; and Chicago churches could have no burying grounds around them. Planked streets aggravated the condition, serving as collectors of the overflow from open gutters.

Van Osdel early realized that the only feasible, albeit drastic solution lay in lifting the city to provide the drainage denied it by nature. Those who would have to make costly alterations to their properties offered strong opposition, but the repeated cholera epidemics and Van Osdel's quiet influence among builders helped impatient young Chicago face up to the required self-surgery. Goaded by Dr. Boone, the state legislature in 1855 created a board of sewer commissioners, which hired Ellis S. Chesbrough, builder of the Boston water system. Chesbrough and Van Osdel became friends, and the resultant plan called for raising the grade and installing a system of gravity sanitary sewers, the first comprehensive sewer system in the nation.

Chicago began the monumental grade raising in 1855, and though

(Continued on page 54)



## 1956 HONOR AWARDS AND CITATIONS



Prudential Building, Prudential Plaza

*FOR COMMERCIAL BUILDINGS*

## PRUDENTIAL BUILDING

★ *Honor Award*

Citation: This building was chosen because of its civic importance, its sound contemporary architectural concept and use of materials, and the engineering and construction skill shown in its design and efficient execution and completion. Owner: Prudential Insurance Company of America; Architect: Naess & Murphy; Builder: George A. Fuller Company.



Lobby of the Prudential Building



FOR COMMERCIAL BUILDINGS



Hubbard Woods Fashion Center

Ruth McCulloch Shop, 85 Linden, in Hubbard Woods

★ *Honor Award*

HUBBARD WOODS  
FASHION CENTER

Citation: This choice was made because of its pleasing architectural design in good taste and various elements well planned and grouped so as to present a unified whole. Owner: Howard Krafur; Architect: Cone & Dornbusch; Builder: Hope Construction Company.





## *Citation of Merit*

### ST. PAUL FEDERAL SAVINGS AND LOAN ASSOCIATION

Citation: This building was chosen because it represents a fine quality of contemporary architectural design that is fresh and modern in feeling, with unusual style and dignity. Owner: St. Paul Federal Savings and Loan Association of Chicago; Architect: Holabird & Root & Burgee; Builder: Dahl-Stedman Company.



St. Paul Federal Savings and Loan Association



St. Paul Federal Savings and Loan Association, 6720 West North Avenue



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**GENERAL CONTRACTORS**

**CHICAGO 22**



# FOR COMMERCIAL BUILDING ALTERATIONS

*Honor Award*

AMERICAN NATIONAL BANK AND TRUST COMPANY



Above and right: American National Bank and Trust Company of Chicago, 33 N. La Salle Street

*Citation:* This alteration work, it was felt, was a good example of modernization. The simplicity and quality of the design are effective, in good taste, and provide a fresh atmosphere most suitable for a modern banking institution. Owner: American National Bank & Trust Company of Chicago; Architect: Skidmore, Owings & Merrill; Builder: Gerhardt F. Meyne Company.



Above and right: Insurance Exchange Building, 175 W. Jackson Boulevard

*Citation:* The alteration work done on the Insurance Exchange Building lobby is an excellent example of modernization that completely transforms the lobby. The conception is dramatic and interesting and shows how effective a well executed remodeling program can be. Owner: Herbert Nicholls; Architect: Naess & Murphy; Builder: John Griffiths and Son Construction Company.

## *Citation of Merit*

INSURANCE EXCHANGE  
BUILDING







First National Bank & Trust Company, Evanston, Illinois—Naess and Murphy, Architects—A. L. Jackson Company, General Contractors

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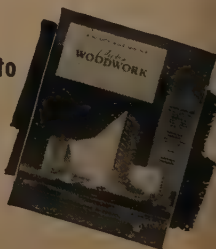


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## SPECIAL GROUP—PARKING FACILITIES

### ★ *Honor Award*

CITY OF CHICAGO  
RICHARD J. DALEY,  
MAYOR

Citation: The jury felt that the city's parking facilities were in their entirety a worthy civic undertaking well executed. A citation was given the program as a whole to the "City of Chicago" and to four of the parking facilities for outstanding architectural design.

### *Citations of Merit*



Above: parking facility number eight, 120 N. La Salle Street. Architect: Friedman, Alschuler & Siner; Builder: A. L. Jackson Company.

Below and right: parking facility number one, 11 W. Wacker Drive. Architect: Shaw, Metz & Dolio; Builder: Herlihy Mid-Continent Company.

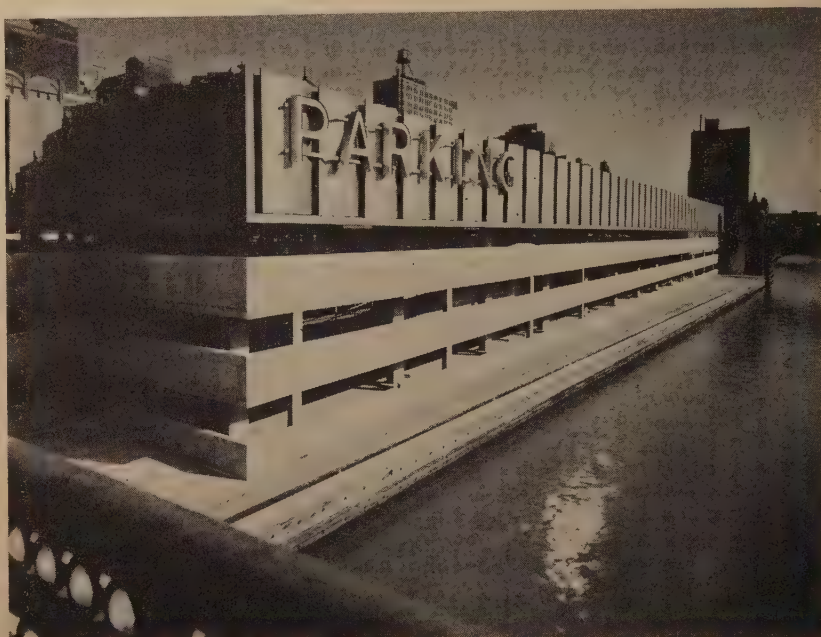




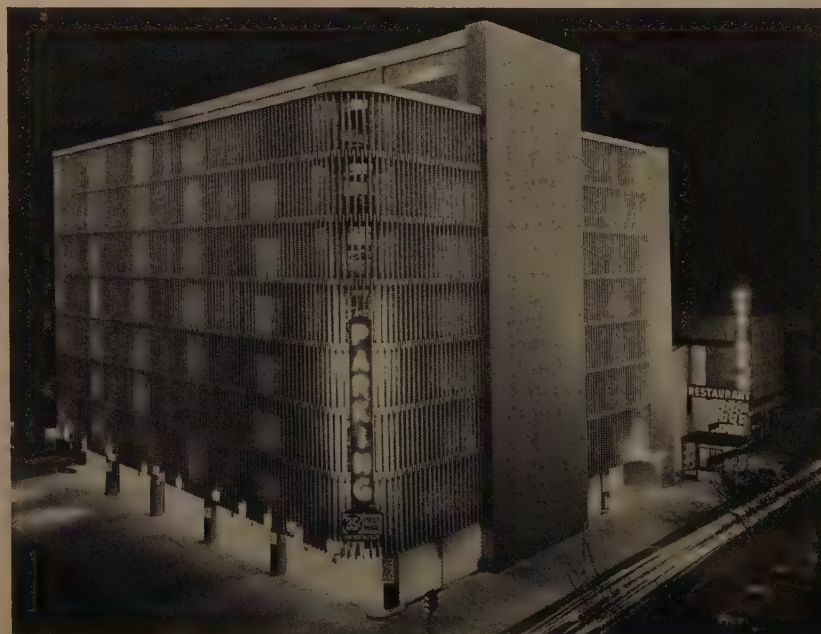
## PARKING FACILITIES

### Citations of Merit

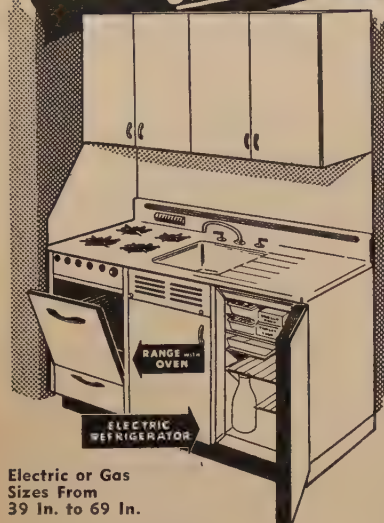
Below: parking facility number two, 20 S. Wacker Drive. Architect: Naess & Murphy; Builder: Herlihy Mid-Continent Company.



Below: parking facility number five, 875 N. Rush Street. Architect: Loeb, Schlossman & Bennett; Builder: A. L. Jackson Company.



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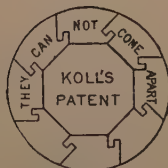
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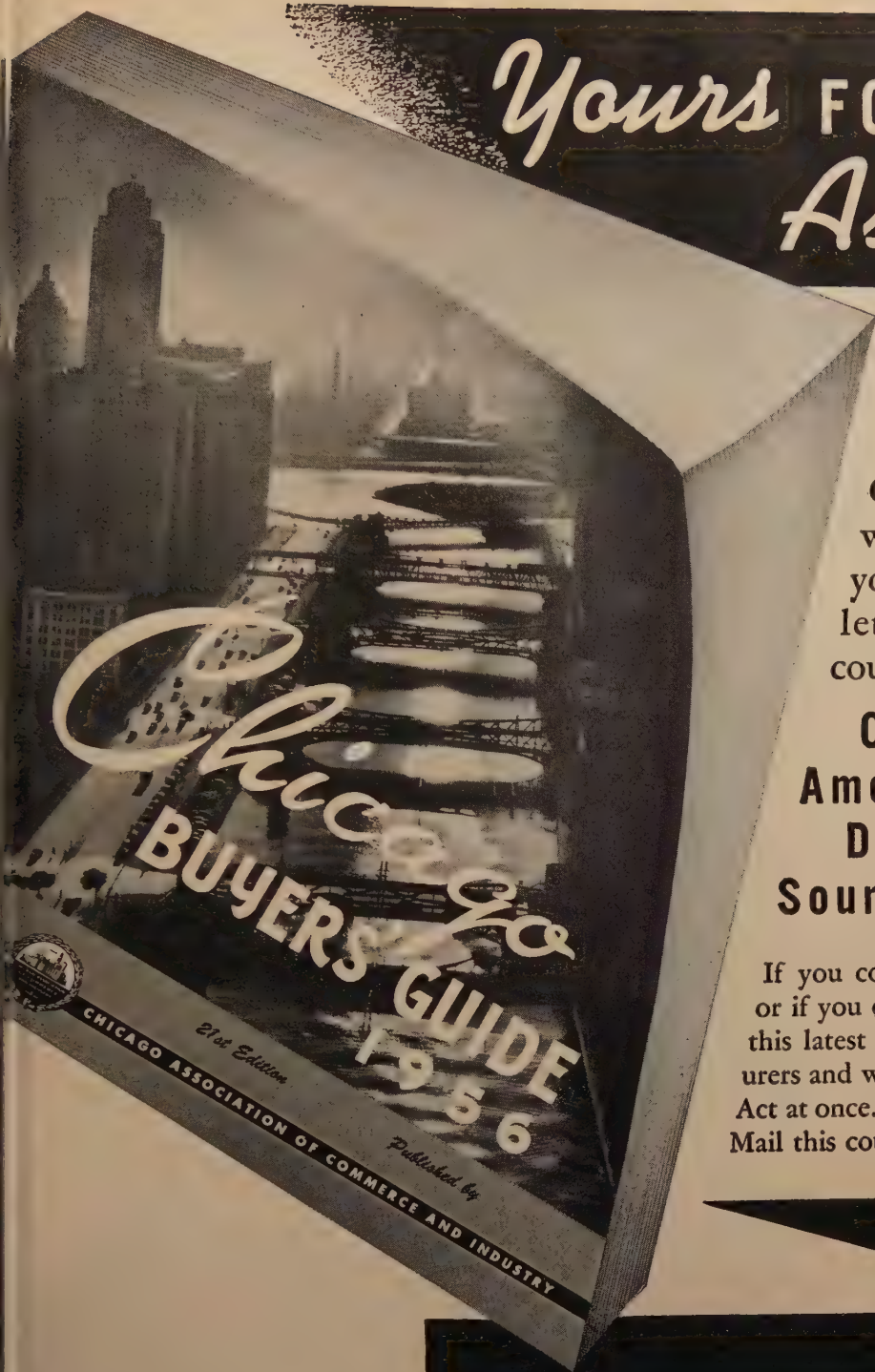


# *Yours* FOR THE *Asking!*

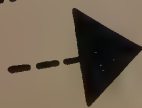
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FOR INSTITUTIONAL BUILDINGS

Educational

★ Honor Award

HIGHLAND PARK  
HIGH SCHOOL



Above and right: Highland Park High School, Highland Park, Illinois

Citation: This school was chosen because of its fresh contemporary design that expresses dignity and is suitable for its residential community. The substantial selection of materials is harmonious with the original school structure. Architect: Loeb, Schlossman & Bennett; Builder: Gust K. Newberg Construction Company.



Citation of Merit

S. R. CROWN HALL  
ILLINOIS INSTITUTE  
OF TECHNOLOGY

Citation: This building was considered a good example of functional design that serves its purpose well in a manner that is most simple, efficient and attractive. Architect: Ludwig Mies Van der Rohe; Associate Architect: Pace Associates; Builder: Dahl-Stedman Company.

S. R. Crown Hall, Illinois Institute of Technology

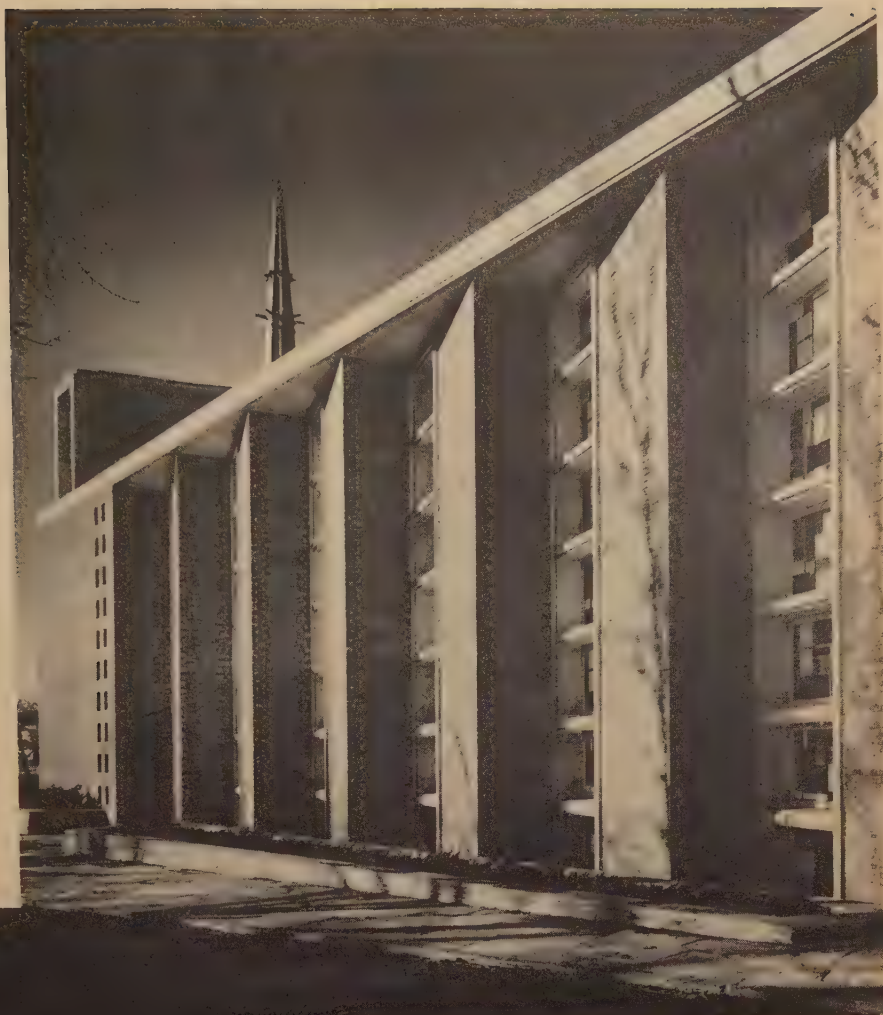




## Churches

### ★ *Honor Award*

ELLIOTT CHAPEL  
OF THE  
PRESBYTERIAN  
HOME

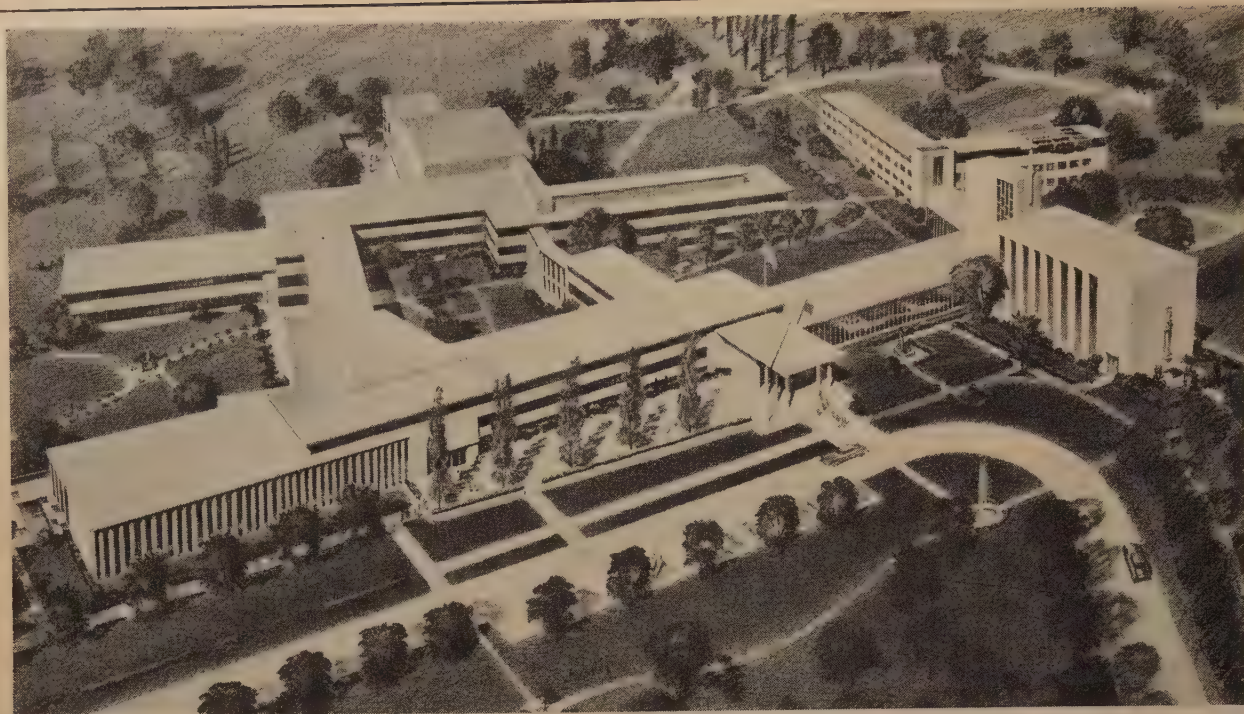


Elliott Chapel, Evanston, Illinois



Citation: The design for this church was chosen because of its feeling of dignity and quality expressed in a fresh and inviting manner. The interior view (left) was considered most commendable. Architect: Schmidt, Garden & Erikson; Builder: William E. Schweitzer and Company.





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## *Churches*

### *Citation of Merit*

ST. ANDREWS  
LUTHERAN CHURCH

St. Andrews Lutheran Church, Park Ridge, Illinois

Citation: This church was chosen because it typifies an interesting contemporary approach to church architecture that seems appropriate and well adapted to the site. Architect: Charles Edward Stade & Associates; Associate Architects: M. Dolan, H. Anderson; Builder: Stade Construction Company.

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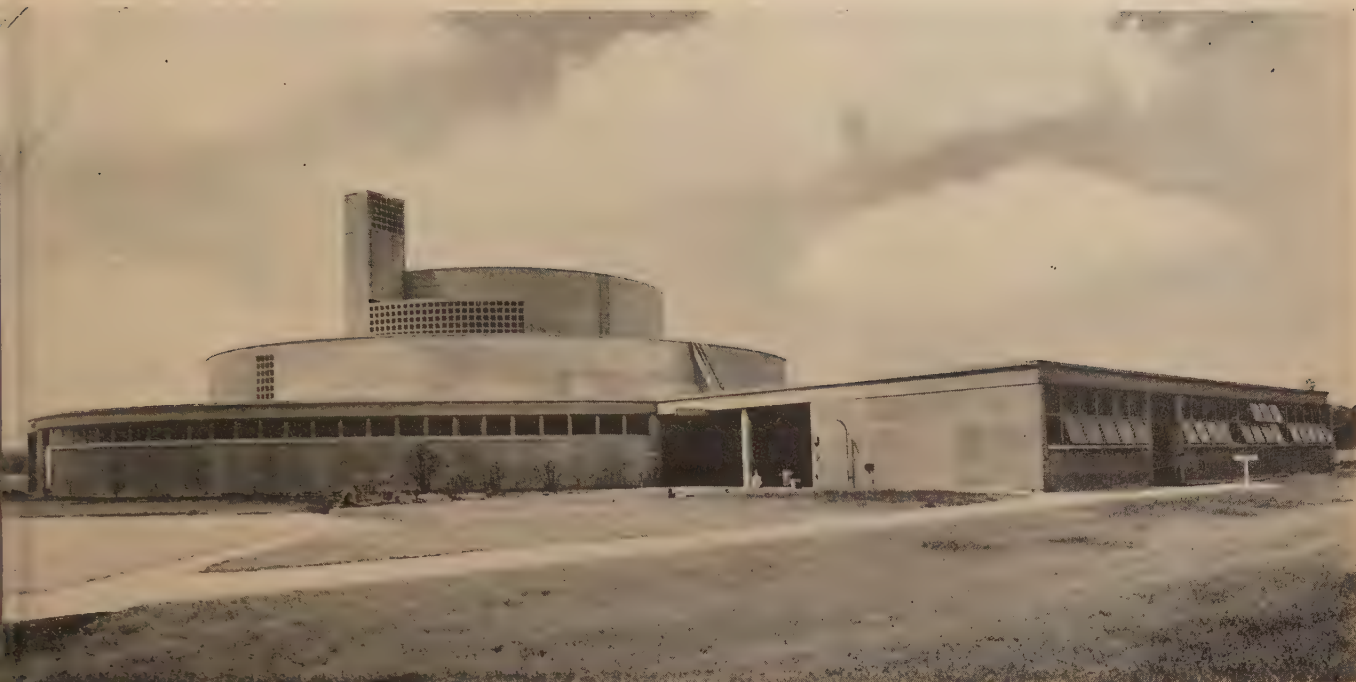
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## FOR INDUSTRIAL BUILDING



Research Reactor Building Facility No. 330, Argonne National Laboratory, Lemont, Illinois

### *Citation of Merit*

### ARGONNE NATIONAL LABORATORY

Citation: The Research Reactor Building Facility No. 330 of Argonne was chosen because of its unusual purpose and the attractive formations that can result from a purely functional architectural approach well handled. Architect: Shaw, Metz & Dolio; Builder: S. N. Nielsen Company.



Research Reactor Building Facility No. 330



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# FOR RESIDENTIAL BUILDINGS

## Citation of Merit

Citation: The jury voted a citation of merit not for specific residences, but for the high order of excellence of design evidenced in the residential work of Frazier and Raftery.



Walter S. Frazier residence, Geneva, Illinois



H. Raftery residence, Geneva, Illinois

airway, Duncan Hodges residence, Lake Forest



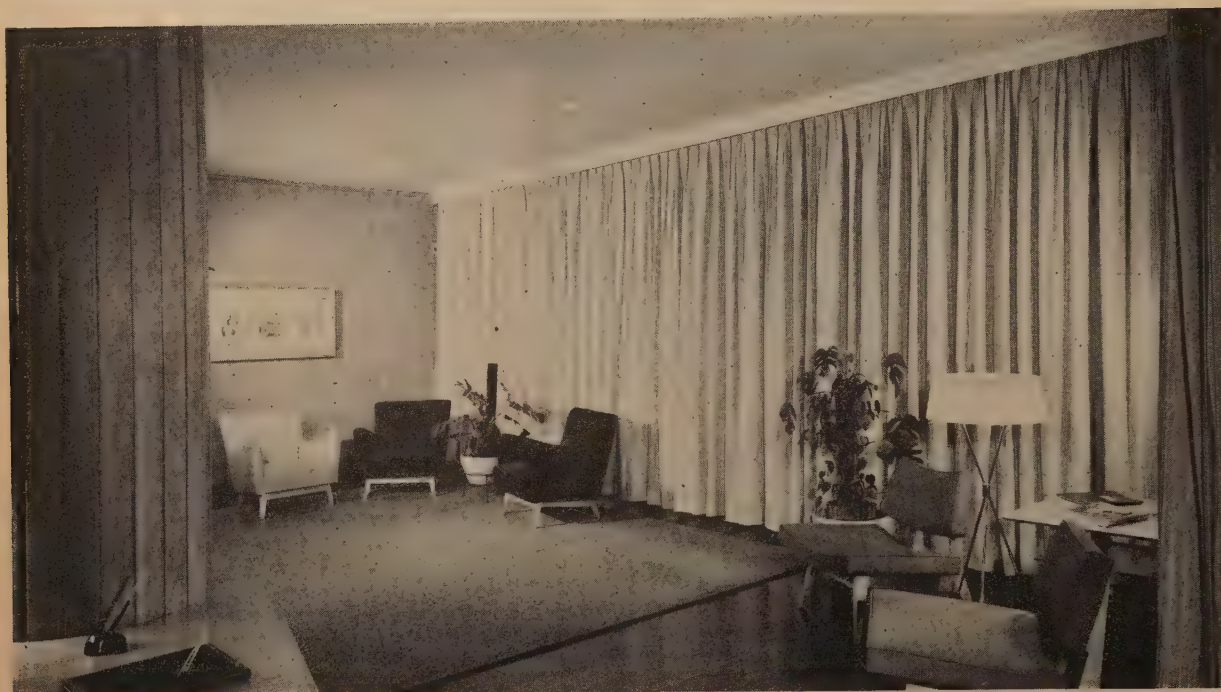
Henry Rowley residence, Lake Forest, Illinois





## MISCELLANEOUS GROUPS

NATIONAL HEADQUARTERS BUILDING, NATIONAL CONGRESS OF PARENTS



National Headquarters Building of the National Congress of Parents and Teachers, 700 N. Rush Street

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AND TEACHERS

★ *Honor Award*

Citation: This building, it was felt, was very expressive of its purpose and in the use of materials and sculpture has an architectural style of an unusual and fine character. Architect: Holabird & Root & Burgee; Builder: Poirot Construction Company.



National Headquarters Building

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The Norman Ross Memorial Fountain, Ravinia Park

## ★ *Honor Award*

SYLVIA SHAW JUDSON

Citation: In recognition of superior accomplishment in conjunction with architecture . . . Sculpture of the Norman Ross Memorial Fountain in collaboration with Holabird & Root & Burgee, who designed the fountain pedestal.

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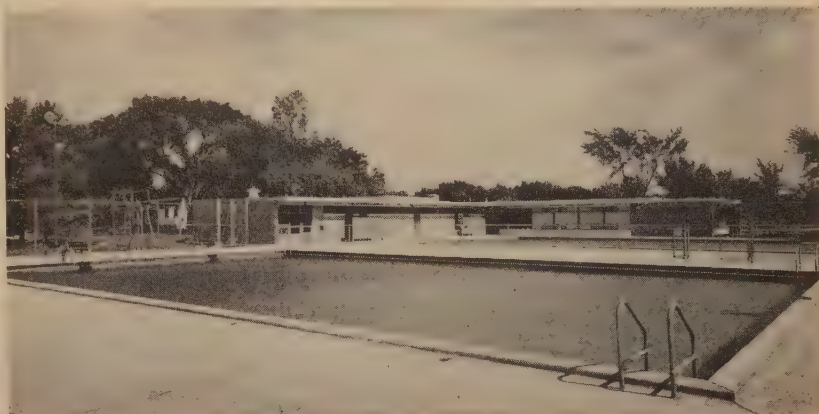


## FOR PUBLIC BUILDINGS

### *Citation of Merit*

#### WEST PARK COMMUNITY HOUSE — PARK RIDGE

Citation: The West Park Community House was chosen because of its simplicity and economy and the feeling of quality of its design. Architect: Ralph E. Stoetzel, Sr.; Builder: Coath & Goss.



West Park Community House, Park Ridge, Illinois

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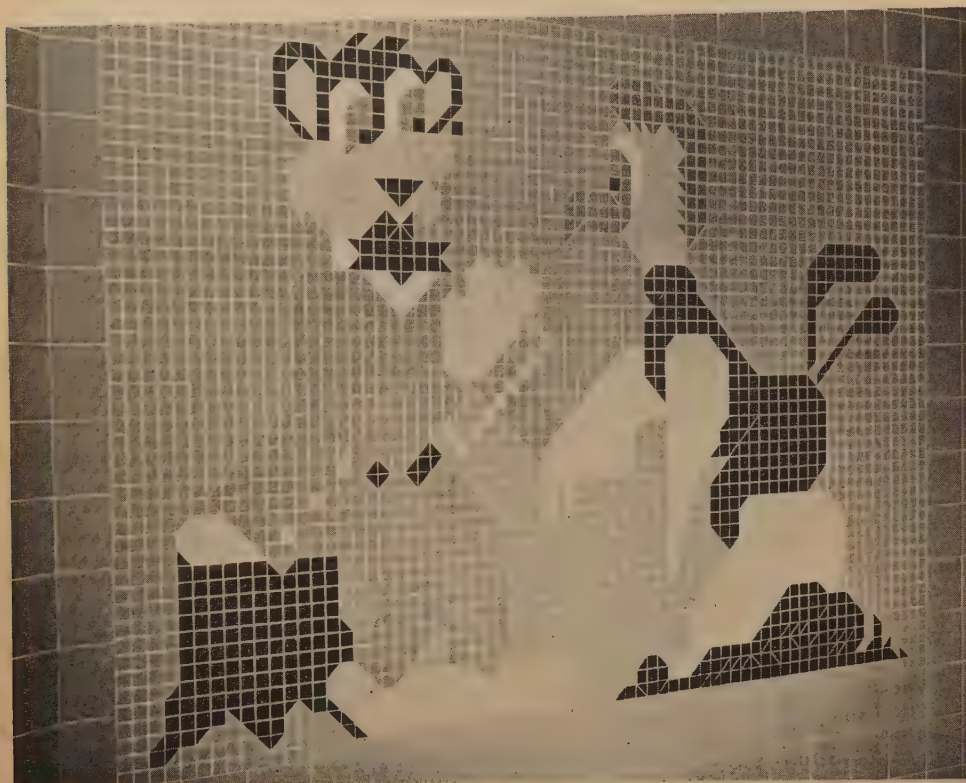
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## City and the Citizen

(Continued from page 23)

In the next ten years close to 30 million people will be added to our total population. During this period, farm population will decrease and it is therefore reasonable to expect the 68 metropolitan areas to increase by 25 to 30 million souls by 1965.

Are these additional people going to be responsible, satisfied American citizens and also, by the way, good customers? Or are they going to be the victims of the metropolitan crisis? Are we going to have them all live in the suburbs where they create a demand for expanded city-wide facilities without in any way supporting them and to a lesser and lesser degree supporting business in the cities? If this occurs, central business districts which now represent almost one third of the assessed valuation of all private real property in large American cities will be called on to carry an even greater share of the load while at the same time not getting a proportionate share of revenue. This is something that you are facing up to. Pittsburgh has just about done the job of restoring the heart of the city. Few others have, and despite what Frank Lloyd Wright says about cities, we know that the downtown area is the heart and that without a strong heart no organism can be strong.

### Alternatives

What alternative is there? If living in the city becomes more and more intolerable, all middle and high income families will move to the suburbs. Much industry and commerce will follow them. Transportation lines will lengthen and fill to overflowing as people travel from home to work and businessmen try to do business with each other from one side of the community to the other. The metropolitan area will grow fitfully and in an uncoordinated way. The city will become not a logical entity radiating outward but a confused and frustrating agglomeration of independent, unrelated and unreliable units. The cost of public facilities will increase and so will the demand for tax monies.

Today, big companies are rating cities in terms of whether they offer a good future for new plants. As

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these companies become more sophisticated about evaluating the future of cities many of our large urban areas are going to be entirely bypassed by the major corporations. And quite a few will lose the plants they now have. For these companies now realize that a plant will be successful to a considerable degree in relation to the environment within which it operates. The all-important questions of productivity, of absenteeism and of availability of labor are directly related to city planning.

A few years ago Pittsburgh found out it could not attract white collar and professional talent because, among other reasons, the collars wouldn't stay white. Many local chambers of commerce today would be horrified if they realized that the cities they speak of so glowingly are black-listed by some important corporations as sites for future plants.

The most important element in this metropolitan problem is, obviously, housing. Bad housing is detrimental to both workers and custom-

ers. Today it is estimated that five million dwelling units are slums. This means that American families are living in dwellings without a place to take a bath. Some have no running water; still more have no hot water. The children and adults of one family must share a toilet with the children and adults of another. Others live in excessive danger of structural collapse or fire. Some have no electricity. Their rooms are dark and difficult to keep clean because they are unpainted. Others have less space per room than health authorities say is necessary for health, or too little space for wholesome family life. Still others share the entire dwelling unit with one or more other families. And those who live in such dwellings inevitably also have the least in yard and playground space for play, the poorest in school facilities, and streets, sidewalks and other public facilities. Such conditions can only increase the discouragement and frustration of those who must use them.

#### *Repairs Needed*

Another 20 million of America's urban dwelling units are in need of repairs or major rehabilitation, if they are not to become slums. In the past 20 years study after study has shown that the areas of cities with the highest incidence of disease, crime, and delinquency, coincide with the areas which are slums or badly blighted. Throughout the country experts agree that bad housing contributes to poor mental and physical health, accidents, crime, delinquency, and other social problems. These, in turn, mean reduced productivity at a time when business finds itself unable to recruit sufficient personnel for many classifications of jobs.

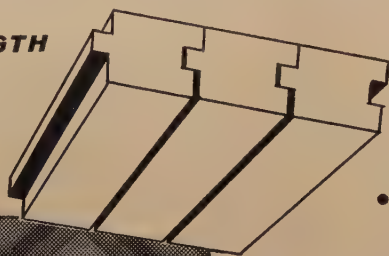
The people who live in such housing do not make good customers. It is obvious that those who do not have running water have little use for electric washing machines or waffle irons, those whose houses are unpainted and dirty have little incentive to buy carpets or curtains. It is not so obvious, but still true, that those who must accustom themselves to such living standards in housing are not likely to accustom themselves to higher standards in clothing, books and movies or entertainment.

There are certain standards, of

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course, which they do demand and which society demands for them. They require protection against fire. When they become ill, they require at least minimum medical and hospital services. When they commit crimes or become delinquent, society demands punishment or correction. And for these services, the demand for which is increased by living conditions, the rest of the people, and particularly the business interests, pay the taxes necessary to provide them.

### *One of Many*

While bad housing is one of the worst of America's urban problems, it is only one of the many which are degrading the environment in which nearly all American business is carried on. The dollar losses from traffic congestion are estimated to run to over \$1 billion a year in one large city alone. In spite of the demonstrated importance of recreation to morale in wartime and the extensive recreation programs for employees developed by American industry in recent years, expenditures for recreation in our cities are less than half the sum experts estimate to be required for adequate facilities and services — only one-fifth of our expenditures for tobacco. Half of our school buildings are more than 30 years old; one out of five is only 50 years old. Our cities' downtown trade has fallen behind the increase in population and income of recent years. Suburban trade has increased but downtown is the commercial hub around which the commercial life of the entire community revolves. It is downtown trade which supports local newspapers, radio stations and television stations. It is downtown which provides ease of commercial interchange among the banks, lawyers, printing houses, and advertising agencies; and it is downtown which provides the market for those specialized goods and services that cannot be sold and provided by the outlying stores which serve only a portion of the community's population.

So serious is the prospect in the years just ahead that Housing and Home Finance Administrator, Albert M. Cole, predicted at a meeting of the American Municipal Association on November 29, 1955, that "the people of any city, without a

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comprehensive plan of action underway within the next five years at the latest, will face municipal bankruptcy in 1965."

The solution which this present and growing problem requires is not strange to businessmen. Even the smallest of our business units, the retailer, cannot operate profitably for long without regularly comparing last year's figures to this year's and without continuous and intelligent evaluation of what the year ahead will bring. And he understands full well the need to keep up with the changing face of America, the pace of America, the desires which might develop next week, next month, next year. The evidence of this can be seen every day on Michigan Boulevard or on Main Street as new facades, new storefronts, new store buildings come into being.

### **Planning for Future**

The importance of planning for the future is even more readily demonstrated within the industrial community. Here the planning ahead is not just in terms of weeks or months, but more often in terms of years, and sometimes in decades. Today the automotive industry is making capital outlays to build new plants and to refurbish and expand old plants so that they can sell products to customers not yet born. And basic to industry's planning for the future is research, research into new materials, new products, new methods of increasing the efficiency of production. It is accepted practice in industry that future profits must be insured by research, planning and building today to meet tomorrow's problems and conditions.

The fact that business is committed to long range planning is probably the most hopeful factor for urban renewal. Businessmen would have to be blind in order not to take into account the realities of the market and the facts about plant environments. Today leading corporations such as General Electric Company and Sears, Roebuck and Company are making major commitments to throw their full weight behind urban renewal in the areas in which they operate.

Yet, many businessmen refuse to consider that the orderly develop-



ent of the city is their responsibility. They must be made to realize that their participation and their companies' money are essential to the rebirth of the cities. In many cases it is not additional money that is being asked of them but simply that money that would be spent in any case be wisely used in cooperation with the expenditures of other firms toward the common goal of creating better cities.

As you know, urban renewal will be a costly and continuous business. Handled on a hit or miss basis, it will turn out to be a ruinous one. But if the citizenry, the municipal administrations and particularly the businessmen tackle it on a broad and well integrated basis it will not only raise the standards of living of tens of millions of people, it will also pay for itself and finally make possible the environment and climate without which business can never reach its 1965 goals.

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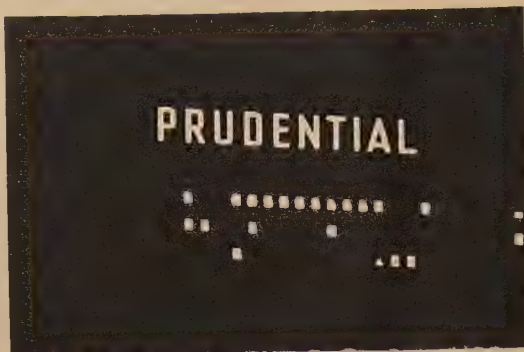
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## "Chicago Style"

*(Continued from page 24)*

the city's later growth outstripped Chesbrough's plan, it represented an incalculable advance over the "drainage by evaporation" of its day. It made possible an abundant supply of pure lake water, basements under buildings, the growth of a municipal water system and the laying of gas mains.

Chesbrough stayed on to become city engineer and twice president of the Western Society of Engineers. He and Van Osdel again joined forces to raise the city to its present level after the fire of 1871, when the city council named Van Osdel chairman of the committee to work out new grade proposals. During his term in city council, Van Osdel also drafted and secured passage of Chicago's first building code.

The mid-century victory over Chicago's terrain, a victory won by its architects and engineers, signalled the city's fabulous growth. Within ten years the population more than trebled, to reach 110,000 by 1860, and then trebled again in the next decade.

From the first ten miles of Galena and Chicago Union Railroad track, opened in 1848, new lines and connections spread across the prairies. By 1867, the North Western reached Council Bluffs to connect with the Union Pacific, and two years later, with completion of the Central Pacific, Chicago was joined by rail to both coasts.

### *New Industries Mushroomed*

New industries and businesses mushroomed, for which the city's dozen architects erected block upon block of new buildings, creating in turn demands for more materials and more industries. Van Osdel popularized the "iron fronts," or cast-iron facades, and the use of cast or wrought iron columns — the first attempts at fireproofing in a city continually harried by blazes fed on its preponderantly frame construction and fanned by its characteristic winds.

Cyrus Hall McCormick had begun to produce his reaper in his first Works on the north branch. Young George Pullman, at news of the 1855 grade raising, had left his building moving business along the banks of



the newly widened Erie Canal to help lift Chicago's structures, including Van Osdel's famous Tremont house. Twelve years later, Pullman drew on the boyhood skills learned in his father's cabinet shop to found the Pullman Palace Car Company.

The first annual review of Chicago business published by the Daily Democratic Press in 1853 listed the manufacture of railway cars, steam engines, carriages and wagons, plows, stoves and other metal ware, together with such enterprises as foundries, tanneries, meat packing plants, grain elevators, lumber yards, brick yards, stone quarries and a fast-growing retail trade.

Occupying Van Osdel's first "iron fronts" along then pre-eminent Lake Street were such names as merchant Frederick Tuttle, later to become proprietor of the Sherman House and partner in William G. Hibbard's hardware business; D. W. Raymond, who as mayor salvaged for the city from old Fort Dearborn the site of the present public library; and Hugh W. Dickey, first president of the gas company.

#### *Chicago Iron Works*

The first of the fashionable "iron fronts" had come from D. D. Badger of New York, but Elihu Granger, an early partner of Van Osdel who had helped the architect with the first grain elevator, established a Chicago iron works that soon supplied its building needs.

Business and building slowed during the 1857 depression, followed by the Civil War diversion of men and material into military channels until 1865. But the men who were to forge the pattern for Chicago's next great epoch were not heedless during those difficult years. The increasing availability of plate glass at feasible prices, together with the growing use of iron, soon brought the realization through architecture of the dreams of men like Potter Palmer, John V. Farwell and Marshall Field.

Lake Street's "iron fronts" had pushed to their eastern limit at the Illinois Central tracks, and room was needed for expansion. Elegant residences and costly churches lined Wabash, but along State Street modest frame houses and low land values beckoned to the entrepreneur. Selling his Lake Street business, Potter Palmer bought a mile of State Street

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property, and by 1865 stone contractor Augustine Wallbaum was putting in the foundations for four new Palmer buildings.

Into the first floors of these buildings Van Osdel put iron and plate glass, with four floors above of marble, and there moved the new Field, Leiter and Company, launching with its dazzling windows a new era in merchandising that would catapult State Street to world-wide retail prominence. John V. Farwell, whose partnership with Marshall Field and Levi Leiter had been amicably dissolved, also left Lake Street, but chose Wabash for his new location.

Palmer reputedly invested at least \$2.5 million in State Street, including 35 buildings, and gave the city enough land to widen it to 100 feet. His first Palmer House stood on the site of Van Osdel's home at State and Quincy; the second at the present location at Monroe. The street's broad gas-lit stretches not only lured Chicago's older merchants from Lake and South Water, but attracted new enterprises from across the country.

## Steam Heating

Iron and plate glass, though dramatically visible, were not the only innovations of the period. Chicago gave important impetus, too, to the acceptance of steam heating. The cost of copper pipes had discouraged steam installations, and the cast iron used for hot water proved unsuitable for steam. J. J. Walworth's Chicago Steam and Gas Pipe Works developed a method for threading wrought iron which brought steam to a competitive price level. Three public schools were fitted for steam in 1856, precipitating a loud howl from citizens who had suffered through their three R's huddled around pot-bellied stoves. Indoor plumbing, in the form of rudimentary drain connections with the new sewers, also was being introduced into large buildings.

Richard Teller Crane, who had opened a one-man foundry in 1855, brought his brother Charles into the business, and they ventured into jobbing wrought iron pipe and installing steam heating systems. The prized heating contract for the Cook County Courthouse additions tided the infant business through the 1857 panic and established its reputation. The Crane Company, then known as



Northwestern Manufacturing, soon expanded to machine manufacture and, in 1867, to freight elevators.

The building industry is heavily indebted to Chicago for the elevator, the "hoisting machine," as it was first named. Van Osdel's hoisting machine for the storing and loading of grain had been adapted gradually to other uses—several of his Lake Street buildings had rope hoisting machines for moving stock and supplies. John Farwell's new building on Wabash boasted a steam elevator, and by 1864 John Kennedy had installed some 300 hoisting machines in the central district. Crane installed one of his first hoisting machines, along with steam, in P. F. W. Peck's Wabash Avenue building.

### First Passenger Elevator

The first practical passenger elevator, an essential element to the skyscrapers yet to come, appeared when C. W. Baldwin invented and installed a hydraulic elevator for the Lake Street store of Chicago's foremost crockery dealer, Arthur G. Burley, in 1870. When Baldwin perfected his machine for William E. Hale, the manufacture shifted to Elisha Graves Otis at Yonkers, N. Y.

The city played an equally important role in the promotion of cement for building construction. The late Henry Ericsson, one of Chicago's best known contractors, reports in his "60 Years a Builder" that Van Osdel's records showed use of Portland cement as early as 1861, in George Smith's five stores on South Water Street. This may have been imported from England, since the Portland Cement Association states American manufacture began in 1871. Van Osdel's huge Farwell wholesale building at Monroe and Franklin used walls of concrete in 1875, and his records indicated concrete in the earlier Drake-Farwell Building on Wabash in 1869.

The fate of the Drake-Farwell Building prophetically underscores Chicago's next important construction step. Completed in the spring of 1870, the Drake-Farwell rose to seven stories, adorned by a modish mansard roof and acknowledged as one of the city's most imposing buildings. On September 4 of the same year it was completely gutted by fire.

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of the masonry undamaged, Van Osdel rebuilt it to five stories. Only two weeks after completion of the re-building, the second Drake-Farwell fell prey to the Chicago Fire of 1871, which spared with freakish caprice only one important building in the business district, the new and still unoccupied Nixon at LaSalle and Monroe.

Every city and village knew the terror of the word "fire," and Chicago more than most. Frank Randall's carefully detailed "History of Chicago Building" spreads a pathetic record over the years. Typical was the log of the Tremont House: the first burned in 1839, the second ten years later, and the third in 1871. The 1871 holocaust, in fact, might not have spread so fast and so far but for a fire department exhausted by fighting a series of smaller blazes for over a week, including one on October 7 that burned out four blocks between Van Buren and Adams from Clinton to the river.

Mrs. O'Leary's cow may have been myth, but wooden floors, unprotected iron columns and load-bearing walls of wood, brick or limestone were facts. The heat of a hard fire already had proved in previous years that it could melt or cave in the "fireproof" iron fronts, topple brick and stone, and send building interiors crashing through to their foundations.

### Dry Summer

The summer of 1871 was dry and windy. On October 8, like one of McCormick's reapers sweeping a field, the flames mowed down the city and in three days leaped the river to reach hundreds of tons of pig iron stored outside McCormick's Works, sending molten streams of metal trickling down into the water. Almost three and a third square miles were leveled, and \$186 million, or a third of the city's wealth, destroyed. One of the few business buildings spared, because of its then isolated location at Wacker and Randolph, was the Lind Block, later known as the Sargent Building, and still standing as a monument to mid-nineteenth century construction.

As the flames spread, Van Osdel hurriedly buried his plans and record books in the earthen basement floor of the newly opened Palmer House, covering the pit with damp



ay and sand. When the ruins cooled and he returned to dig up his books, he found the clay burned hard and the records intact. He hastily installed a temporary floor in the basement of the uncompleted Nixon and reopened his offices there. In the post-fire rush to rebuild, Van Osdel alone, with his salvaged plans, put up over eight thousand lineal feet of montage in 18 months, many of the structures being exact reproductions of their originals.

At news of the Fire there hurried from New York to Van Osdel's improvised office George H. Johnson, the Badger representative who had supplied the first Lake Street iron fronts. Johnson's consuming interest lay in fireproofing, and from the architect's story of his salvaged plans, Johnson conceived the first effective fire protection — hollow clay tile for floor arches, partition walls and the encasement of metal members.

#### *Immediate Application*

Johnson's historic tiles found at least one immediate application, in the James Kendall Bank Building at Dearborn and Washington, on which Van Osdel had begun construction just before the Fire. The foundations were in and the walls started, but there was still time to use Johnson's idea. Early in 1872, with accompanying civic celebration, the world's first truly fireproof floor arches and partition walls were laid in the Kendall.

Sources differ on who molded those first tiles. Sanford Loring, trained in Van Osdel's office and by then a partner of William LeBaron Jenney, also served as treasurer of Chicago's first structural clay works, the Chicago Terra Cotta Company, organized in 1869. It seems likely that Van Osdel and Johnson induced Loring to mold the tile to the Kendall Building specifications. Loring's firm evolved into the Northwestern Terra Cotta Company, one of the largest terra cotta firms in the world. Fritz Wagner, who joined Northwestern in 1881, is credited with designing many of the forms for architectural terra cotta and the anchors by which they could be fastened to metal-framed structures; his son, Carl, has contributed much to the success of another important Chicago concern, American Terra Cotta Company.

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This statuary was created by Milton Horn, Chicago sculptor. It consists of a central figure of a female torso rising from the Lake, representing Chicago, and is surrounded by a bovine creature for the meat industry — a shaft of wheat symbolic of plenty — plant forms representing the city motto "Urbs in Horto" and a huge bird symbolizing transportation.

proofing tile used in New York, first in a residence, and then in 1879 in the Morse Building. The terra cotta for both buildings came from Chicago.

The Kendall demonstration persuaded Potter Palmer to alter his plans for the 1875 Palmer House. The first Bessemer steel rails had been rolled in Chicago ten years earlier, but the steel I-beams Palmer fancied for his new hotel had to be imported from Belgium. Palmer protected the costly metal with Johnson's tiles.

Not all Chicago's leaders had the foresight of Kendall and Palmer. Speculation boomed in the post-Fire rebuilding period, and the commercial district swiftly expanded, repeating the old errors of wooden floors, unprotected metal columns and the like. Haste and indifference soon exacted their toll when the less noted but damaging fire of 1871 swept sixty acres from Van Buren to Twelfth and from Wabash to Clark. Not until the burning of the Grannis Block in 1885 did Johnson's lesson exert its full impact on building.

#### Wood Floors

Burnham and Root's Grannis was the pride of its day, and its cast iron columns were encased in two and a half inches of tile. But floor construction was of wood, as were joists, rafters and the stairway winding upward around the open elevator shaft. When fire struck, only the masonry walls survived, and the Grannis at last burned the importance of full fireproofing into public consciousness.

Tenants flocked to the new buildings then going up at the head of LaSalle Street, which were constructed under Johnson's system for fireproofing floors and partitions as well as columns, an undeniable factor in LaSalle Street's successful bid for eminence as the city's financial and business center. John Ericsson, like Amos Grannis a master carpenter turned contractor, commented, "The Grannis fire dramatized the passing from the realm of commercial building of the carpenter as builder, a position he had held proudly through the centuries."

The brick mason was fated soon to join the carpenter in bowing to new skills and technology. Another Chicago development was to create



new trades and industries in structural metal.

The owner of a fleet of Lake Michigan steamboats, Captain Eber Ward, had felt the competition keenly when the Michigan Central Railroad linked that state's commerce to Chicago in 1853. Alerted thus forcibly to railroading's future, Ward proceeded to produce rails at his Wyandotte Mill near Detroit. In 1857 he built the North Chicago Rolling Mill on Wabansia Avenue in Chicago.

Ward blew America's first Bessemer steel at Wyandotte, and rolled the first steel rails in 1864 at his Chicago Mill. But for the evolution from rails to structural steel, Chicago's foundation problems must be taken into account.

The same soil formations that forced Chicago to hoist itself or perish gave builders endless headaches in making their structures sound.

#### ***Problems Mounted***

The builders' problems mounted as owners, excited by the new elevators, sought higher and more elaborate structures. The need for more basement space for steam heating plants, elevator machinery, and other service and maintenance equipment compounded the difficulties confronting builders.

In 1873, a young German draftsman hired by Van Osdel, had proposed the first practical solution with his "Method of Isolated Piers," a system for locating and proportioning the size of footings in relation to their load and soil conditions. Baumann's method still presented the owner, however, with what he regarded as inroads on valuable basement space.

Then John Root, faced with a ten-story load for the Montauk, the highest yet attempted, obtained old steel rails, in all probability the products of Ward's mill, and criss-crossed them in a grillage over which he poured Portland cement. Root's "floating foundations" encouraged the greater heights and loads yet to come. Critics generally accord to the Montauk, too, the honor of the birth of modern architecture. Clean and functional, it pioneered the "commercial" style on which such leaders as Louis Sullivan and Frank Lloyd

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Wright later would base their own distinctive approaches.

Chicago building ground to a halt in 1883, when 3,800 of the city's brick layers struck, a move destined to send the mason the way of the carpenter in terms of their prime importance to construction. For one of the buildings on which work stopped was Jenney's Home Insurance, where the foundation and first two granite stories were in, waiting for the brickwork above.

### *Civil War Engineer*

Jenney, who served as an engineer on the staffs of Grant and Sherman, had developed a sharp sense for the adaptability of materials while searching farm and factory for the means with which to bridge Sherman's march to the sea. Ericsson relates that when the brick layers' strike broke, Jenney closed his desk in the middle of the afternoon and went home. Mrs. Jenney, surprised, rose to greet him and laid a heavy book she'd been reading on a birdcage on a table nearby. Jenney was struck with the strength of the wire frame, and this incident, says Ericsson, inspired his invention of metal frames for buildings.

While the brick layers remained idle, a "network of iron columns, piers, girders and floor beams . . . remarkable for its finished appearance," according to the *Inland Architect*, rose above the granite. When the masons returned to work, the walls they laid served as mere curtains, no longer supporting the floors or carrying the building load.

The late Elmer C. Jensen, at one time a Jenney partner, related how the first Bessemer beams were used in the Home Insurance. Henry Bessemer, hearing of the novel metal frame, wrote to Jenney suggesting use of his steel, and Bessemer's beams were substituted for iron in the two top stories.

By 1885, when the Home Insurance was completed, the North Chicago Rolling Mills announced they would begin production of structural steel (beams, joists, girders, braces). Though admitting the Home Insurance beams had come from Pittsburgh, North Chicago claimed its venture would constitute a new industry in the world, a prediction later justified by the role of another Chicagoan, Elbert H. Gary.



the formation of U. S. Steel, of which the North Chicago mills became a part.

The rails-to-beams story reads similarly for another Chicago area plant, the Inland Steel Co. General P. Buckingham had founded the Chicago Steel Works in 1872 to slit and reroll old rails. In 1893, the firm was reorganized with the help of Joseph Block as Inland Steel, later a number among its many contributions to the building industry a reinforcing bar which has become the standard for construction.

A host of other Chicago inventions and improvements crowded upon each other during the same period. Charles Louis Strobel invented the T-bar type column for the Rand Mcnally Building in 1889. Thomas Goulding, an English machinist who had come to Chicago when the Illinois and Michigan Canal was under construction, developed the method and machinery for producing pressed brick.

#### *Underground Phone Lines*

A partner in another brick firm, the Chicago Anderson Company, was Eliza Gray, who was honored as the inventor of the telephone along with Alexander Graham Bell at the 1889 Paris Exposition. But whatever historians have chosen to record of their rival claims, it is certain that Gray adapted Johnson's hollow tiles to permit the new telephone lines to go underground and to serve as wire conduits in buildings. From the firm of Gray and Barton grew the Western Electric Company.

Alexander Miller, a mechanic who had worked with Van Osdel on the first Newberry and Dole grain elevator, joined forces with another Chicagoan, Joseph T. Moulton, to construct such elevators elsewhere throughout the country. Moulton's son, George, joined them to build the first grain elevator in Duluth, and George Johnson built those at Buffalo.

After the Chicago Fire, Johnson and George Moulton established a Chicago partnership to manufacture Johnson's tile. At Johnson's death, his son, Ernest, joined Moulton to organize the Pioneer Fireproofing Company, a leader in an industry that reached a two million ton output by the turn of the century. A structural advantage its inventor

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had perhaps not foreseen accelerated this growth, for the hollow design considerably reduced building weight. With reduced weights, skeleton frames and elevators at his command, only a perfected foundation was needed to open the sky to the builder.

Architects Adler and Sullivan turned to General William Sooy Smith in 1890 for help on the foundations of their Stock Exchange Building, to go up at the southwest corner of Washington and LaSalle, next to the new Morning Herald. The Herald's owner, John Walsh, feared the pile drivers would crack his walls or damage his presses.

Like Jenney, a civil war bridge builder, Sooy Smith had sunk America's first pneumatic caisson in 1867 under the Straits of Mackinac lighthouse, and erected the first all-steel railroad bridge for the Chicago and Alton Railroad.

### *Pneumatic Caisson*

Along the Herald's wall, Sooy Smith dug wells to hardpan, from 51 to 74 feet deep and bell-shaped at the bottom. These he filled with tamped concrete, forming solid piers, and through this particularized solution literally lifted the lid on practical heights for buildings. His Chicago caissons made possible such modern skyscrapers as the Board of Trade, Pure Oil, Banker's and One LaSalle buildings.

Because of its wealth of innovations in style, structure and materials, the years from Johnson's tile to the World's Columbian Exposition in 1893 often is called Chicago's "Golden Age" of architecture. This was the period that produced John Root's beautiful Rookery; S. S. Beaman's Grand Central Station; Sullivan and Dankmar Adler's Auditorium; the Tacoma, by Holabird and Roche; the 21-story Masonic Temple, built by Burnham and Root in 1892 and then the highest building in the world; Van Osdel's last, the Monon; and the final important wall-bearing building, the majestic Monadnock.

Of the dozens of these pioneering structures, most still stand, offering both inspiration and sturdy competition to their newer neighbors. Their worth can better be measured against the fact that Chicago's newest skyscrapers, the recently com-



ted Prudential and the just-rising  
and Steel, could not pierce today's  
line without the legacy of the  
olden Age."

The new architecture stimulated  
new way of life, and was itself  
urished by rapidly advancing tech-  
nology. Many Chicago industries  
w international in scope trace  
eir start or burgeoning to that era,  
d many others owe their later es-  
plishment and success to the needs  
the new construction.

The large apartment building and  
ce residential hotel rode to popu-  
rity on the skyscraper's construc-  
on techniques, with resultant  
ormous expansion in the plumb-  
g and heating fields. Residential  
umbing got its biggest boost from  
ee pay toilets installed by James B.  
ow and Sons, Inc., at the Colum-  
an Exposition. Clow today whole-  
lles rather than manufactures its  
umbing, heating and cooling sup-  
ies, concentrating on the manufac-  
ure of pressure pipe and fittings.  
ut the 78-year old firm designed  
any plumbing fixtures still in use  
nd published the world's first  
ound catalog illustrating a com-  
ete line of plumbing, heating and  
as supplies.

#### *First Use of Gypsum*

The Columbian Exposition pro-  
ided the first large-scale construc-  
on use of gypsum, leading to for-  
mation of another vast industry,  
United States Gypsum Company.  
The Exposition's gypsum came from  
the Michigan Alabaster Company,  
whose secretary was Sewell Lee  
avery, and who in 1902 helped  
ound U. S. Gypsum in Chicago.

The sand and gravel for Van Os-  
del's early concrete may well have  
come from the old Stearns Quarry at  
Twenty-fifth and Halsted, over a  
undred years old and still operated  
oy Chicago's Material Service Cor-  
poration, the world's largest build-  
ng materials supplier.

The Chicago area is rich in lime-  
tone deposits, discovered during the  
digging of the Illinois and Michigan  
Canal, and in sand and gravel, un-  
doubtedly a factor in local builders'  
widespread use of concrete.

An early advocate of reinforced  
concrete was architect Lawrence G.  
Hallberg, who erected two experi-  
mental spans on a vacant lot at St.  
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loaded them with fifty tons of pig iron, and invited builders to inspect them. By 1904, contractor Ericsson erected three concrete structures for Hallberg — the Dearborn Chemical Company, Addressograph Company and Price Baking Powder Company buildings.

The building which focused international attention on the design possibilities of concrete was Richard E. Schmidt's Montgomery Ward and Company Warehouse in 1907. *Architectural Record* cited the warehouse as the first building where concrete appeared on the exterior as an architectural device. Here, also, Schmidt's partner, Hugh Garden, developed the strip window, forerunner of the glass ribbons adorning today's most modern structures.

### **Metal Forms**

Contractors at first hesitated to undertake concrete work, for miscalculation on the costs of wooden forms proved disastrous to many. Another Chicago company, Ceco Steel, came to the rescue with metal forms, patented by C. Louis Meyer, partner in the original Concrete Engineering Company.

A pioneer in steel stairway construction was the Woodbridge Ornamental Iron Company, established in 1913, whose founder, Arthur L. Woodbridge, patented designs that made his Chicago firm the world's largest supplier of such stairways.

Many construction industry associations maintain their national headquarters in Chicago, among them the Portland Cement Association, Concrete Reinforcing Steel Institute and the Structural Clay Products Research Institute. Another major contributor to progress in building is Armour Research Foundation, which, for example, produced Kanamite. A light-weight aggregate of minuscule glass balloons blown from clay granules, Kanamite permits concrete, mortar and plaster to be applied by hose.

Another light-weight aggregate is Zonolite, produced by Chicago's Zonolite Company through processing of vermiculite ore. The light aggregates are as important to today's "skin" construction as Johnson's hollow tiles were to the first skyscrapers. By reducing the weight of plaster or concrete, they permit lighter framing and thinner walls.

Another Chicago invention, the



E-Z-On Plastering Machine, facilitates spray application of these new light mixes. Brainchild of company resident L. H. Hobson, the E-Z-On machines and light aggregates saved an estimated \$2-\$3 million, for example, in the world's first metal-clad skyscraper, the Alcoa Building in Pittsburgh, plus a gain of some 5,000 square feet in rentable space. Skin, or curtain construction, is simply Jenney's skeleton adapted to today's technology. Architects and engineers reason that since the wall no longer supports the structure, it need not be built to carry a non-existent load.

Chicagoans lead the field in this new technique of hanging thin walls of glass, metal, stone or marble upon the frame and backing them up, where building codes permit, with thin plaster or other insulating and fire-resistant materials. Of skin construction examples cited recently in *Fortune*, almost half were designed by such Chicagoans as Mies van der Rohe and Skidmore, Owings and Merrill.

#### Stone and Marble

Naess and Murphy's 41-story Prudential Plaza provides a notable skin construction design embodying the esthetic appeal of stone and marble.

Piling people and activities into multi-story buildings, compressed on comparatively small land space, has created a whole new set of living and working conditions — and new concepts of buildings' functions. Structures today are regarded as filters, expected to screen out not only the extremes of weather, but such modern nuisances as air pollution and noise. "Sound conditioning" has entered the builders' lexicon, giving rise to industries like Chicago's Celotex Corporation. In addition to its acoustical products, Celotex manufactures many other builders' supplies, such as roofing and insulation.

The entire area of protection and control materials, in fact, has shifted from craftsmen-on-the-job to the production line. Companies like Johns-Manville Corporation, with plants in Chicago and Waukegan, make a wide range of materials to insulate, protect, roof and coat structures and their contents. Chicago's Masonite Corp. has turned waste wood into an equally long list that includes tiles, sheathing and flooring.

Construction has come to consist

mainly of putting together hundreds of items assembled from as many plants, a technique that has led inevitably to pre-fabrication and pre-casting of major structural segments, such as walls, floors and roofs.

The synthesis of these new approaches rises today in two of Skidmore, Owings and Merrill's newest buildings, the 19-story Inland Steel at Dearborn and Monroe, and Signode Steel Strapping Company's new Glenview Plant. The Inland building incorporates the latest improvement on "Chicago caissons," steel H pile foundations, and will achieve a

sixty foot clear span within — no columns will protrude into the interior. Appropriately, the exterior skin will be of stainless steel.

For the Signode plant, pre-casting of five-inch, light-weight concrete wall panels permitted the 80,000 square foot structure to be completely enclosed in six days. The structure is sealed, with perimeter heating and ventilation units, and windows of heat absorbing glass.

In the tradition of Van Osdel and the "Golden Age" the community of Chicago builders continues to lead in its gifts to the structural arts.

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## Where Is Technology Leading Us?

(Continued from page 12)

and attention is focused on the leaders. In this country basic science and mathematics are merely elective courses — and unpopular ones at that. We are in a merciless struggle for survival, freedom against regimentation, self-discipline against coercion. We are being challenged from an ideological and technological point of view as well as from a military one. Our choice is brutally clear. As a society, we can either learn mathematics and science — or perish. We shall make the right choice. The reason for my confidence lies in the very nature of our society and our political system, as opposed to the Communist system.

### Preserve Individuality

The American political system has been particularly designed to preserve individuality. The perils of conformity and regimentation on the other hand have been amply demonstrated by recent revelations of the devastating effect of Lysenkoism and Stalinism on the U.S.S.R. Despite the obvious superiority of our system, many continue to worry about the conditions that we and the generations coming after us will face. We worry about where the food is to come from to feed another 50 or 100 million Americans. We are concerned about our dwindling natural resources — iron, petroleum, coal and so on. We wonder what succeeding generations will do.

Such concern is in the main misplaced. It will prove to have been as academic as was any concern that farmers of 50 years ago might have felt about where to get the oats to feed 50 million more horses. Already we have, as an example of what succeeding generations may well do to solve their problems, the free-piston engine. In this engine we have a particularly happy marriage of the best features of both the conventional piston engine and the gas-turbine engine. Its torque characteristics and efficiency are ideal for large automotive units, but its outstanding characteristic is no doubt its complete indifference as to the kind of hydrocarbon fuel on which it is asked to run. Looking to the future, this engine can be expected to become increasingly popular as our

fossil fuel reserves diminish. Ultimately, direct energy from the sun stored up in last year's corn or cotton crop may, in the form of alcohol or cotton seed oil, fuel this year's automobiles.

And now let's look beyond the next generation. The paramount question is, how to assure ourselves adequate energy and material resources. Assuming adequate technology, limitations on the attainments of an industrialized society are set ultimately only by these two factors. Even today, with our present standard of living here in the United States, our requirements for both energy and materials have become enormous. The average United States citizen has at his disposal roughly 13 horsepower or 100 mechanical slaves. Still more significant, this figure is currently doubling every ten years and can be expected to increase faster still. Every American, a generation or two hence, may well rival the pharaohs of ancient Egypt in the power at his command. The current consumption of materials by our society has reached staggering proportions. To support one individual for one year requires, for example, 1,260 pounds of iron, 18,000 pounds of fuels of all kinds, and 400,000 gallons of fresh water. These requirements will continue to expand.

### Energy Reserves

How does research and technology help meet these mounting needs? A dramatic example is given by the sudden change in our situation with respect to energy reserves. Our present assured fossil fuel reserves as represented by all deposits of coal, petroleum, oil-bearing shale and natural gas amount to a combined fuel supply equivalent to more than 360 billion tons of coal. At predictable rates of consumption, however, these fuel supplies would meet our requirements for only a matter of decades. Fortunately, these energy resources, vast as they are, are dwarfed by the energy now becoming available from a source that has come into the picture only within the last few years. Our presently known resources of uranium and thorium — from which we shall derive atomic energy — add up to more

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than 25 times the energy reserves presently represented by assured reserves of conventional fuels. In other words, at expected rates of consumption the energy available from fissionable materials alone would take care of our needs for several centuries. This at least should allow future scientists ample time to learn to tap the inexhaustible energy reserves from the sun.

To get a measure of the amazing new economies available to us in atomic energy, it is well to remember this: that from one pound of fissionable uranium one can get as much energy as from 2,600,000 pounds of coal. Because of this large factor, and especially with a "breeder-type" reactor, which can be made to produce more fuel than it consumes, the fuel cost per se can be made vanishingly small, and hitherto undreamed-of energy supplies become available.

### **Materials Supply**

With low cost energy in prospect, the materials supply problem is also more or less automatically solved. The most critical material for the future will probably be water. As technology advances, more and more fresh water is required for industrial purposes alone. The Great Lakes area has this priceless asset in essentially inexhaustible quantities. But other areas, even in the United States, are not so uniquely blessed.

Fortunately, in these areas, with low cost power available, it becomes conceivable to extract mineral salts from sea water, say by evaporation. The resultant fresh water supply can be used, first, for industrial cooling operations and then ultimately for irrigation. Vast areas of the earth now arid deserts can be made to bloom again.

With ample energy the sea can be mined for other substantial resources. Magnesium is even now being produced from sea water with the expenditure of 10 kwh of energy per pound. There are 5.7 million tons of magnesium in each cubic mile of sea water. Thus, several cubic miles of sea water could provide the entire metal requirements of the automobile industry.

Similarly, in the case of many other materials, it will become possible to process progressively lower grade reserves or develop satisfactory substitutes. Such developments are not now "economic," but economics



a relative thing. With increasing population pressure it must be expected that more and more borderline processes and new materials will come into use. With such possibilities in long-range prospect, the reasons behind the current wave of interest in the peaceful uses of atomic energy are obvious.

The field of materials, however, is one which touches General Motors in the most places and most intimately. In the never ending quest for lower-cost and better performance in all of our divisions, the physical properties of available materials are utilized to their limits. Even for our regular automotive activities we need steel that is stronger, copper that is a better conductor, and insulators that pass even less current. For the newer fields of aeronautics, guided missiles, and atomic energy, such demands are increased many fold. In these areas we will need a whole new category of materials which will operate continuously at really high temperatures.

At speeds now being contemplated for aircraft, the wing surfaces themselves, due to skin friction, attain

bake-oven temperatures which neither the pilot nor the complex electronic control gear can stand. Accordingly, in future planes the power that will have to be provided for refrigeration may well exceed that provided for propulsion.

### *Limit on Performance*

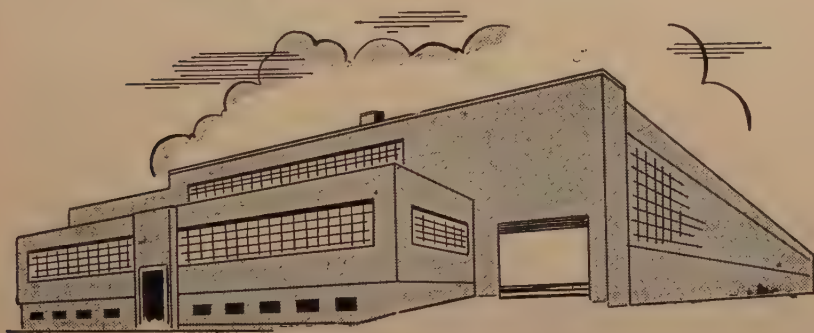
Similarly with respect to the structural elements of engines of all types, it is the physical properties of available materials which set the limit on performance. For chemically powered engines, materials to operate continuously in the range of 2,500 to 5,000 degrees Fahrenheit are urgently needed. For really efficient use of nuclear reactors we need materials which can operate in the range from 5,000 to 10,000 degrees Fahrenheit. The highest temperatures attained in current operating practice, specifically for turbine blades, is in the neighborhood of 1,650 degrees Fahrenheit. With the current scale of materials research effort this figure has been rising steadily at about 100 degrees Fahrenheit per year for the last decade. There is every reason,

therefore, to expect that it will continue to rise in proportion to the research effort expended. Any abrupt advance in materials technology, providing increased operating temperatures of even 100 or 200 degrees, can mean the complete obsolescence of an engine type and therefore of an entire air fleet. Herein lies the true significance of the importance of materials research. The stakes are high indeed, between nations as well as between companies.

New alloys, perhaps even entirely new metals from among the rare earths, will be needed for uses which now can be foreseen. Metals such as hafnium, zirconium, lithium and niobium now are hardly known outside the laboratories. They may soon become as familiar as aluminum, magnesium and zinc are now.

To be prepared for developments in new fields such as these, we at the General Motors' Technical Center are continually broadening and expanding our programs in physics, chemistry, metallurgy, electronics, mathematics, and engineering. We are dedicated to the never-ending task of advancing technology. The

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technological chain reaction can provide for all our material wants. Wisely used, the by-product, leisure, can provide time for the study and solution of our social problems. Training for leadership in both technical and non-technical fields must be much improved. The foundation of scientific knowledge, both in the physical and biological fields, on which the entire physical structure of our current civilization rests, must

be further strengthened and deepened by patient basic research.

These are exciting times in which to live. We are in the middle, or more likely in the beginning of a second industrial revolution. Insofar as technology is concerned, the road ahead is clear. With wisdom brought to bear upon all the problems of our society, this second industrial revolution will not stop until the standard of living of the entire world has been raised to undreamed of heights.

## Businessman's Role In Election Year

*(Continued from page 18)*

profound problems of government — in housing, highways, health, education, management-labor relations, in defense and foreign policy. What are our answers to these problems? This is the raw material of politics. On these questions the political future turns. Surely businessmen or any other group have a claim to support of the public only as they are aware of and offer sound answers to them.

Visitors from other countries have noted that in America businessmen have unusual prestige. They tend to become leaders of their communities. Their names are in the newspapers, on the hospital boards and on the symphony committees. Yet at the same time it seems they are always fighting a rear-guard action. Their leadership is continually disputed, and in politics with a good deal of success. In short, their position is strong, but contested — contested, for example, by professional politicians, by labor leaders, and above all, in the all-important field of public policy.

In the past 20 years, a big change has taken place in America. Businessmen were not always active in community affairs. Indeed, there was a time when in some corporations things might go badly for a business man if his name appeared in the newspapers. Those days have gone. Business and community are on the best of terms. However, for the long term influence of business, this is not enough. We can be on all kinds of boards and committees. We may be contributing generously to our favorite charities, but may still be without influence in politics. And we will continue to lack influence so long as we have no coherent policy.

It is not enough to take rifle shots at this or that piece of legislation. It is not enough to pass resolutions against this or that union proposal, and certainly not enough to make speeches at Chambers of Commerce or Rotary Clubs. We must have a point of view — a philosophy which will permit us, instead of resisting change, to play a creative role in controlling and directing it.

For our businesses we make careful plans; we do the same for community projects. We have not as yet, however, put our political ideas in order. Of course, in a sense we do have a policy. We believe in keeping government out of business. We believe in lower taxes. We want to reduce the civil service. All this is good, but it is still negative. The thing we have to decide is what we are for.

In this respect, politicians are much wiser than businessmen. They know that political power is a fact. They have their ears to the ground. They watch social and economic movements. They see the changing weight of various interests, groups and sections. Knowing that these changes are bound to be reflected in the political process, they plan and act accordingly. Right now many politicians are spending a good deal of time figuring out the relevance of these changes to candidates and policies in this election year. The curious thing is that in business we do somewhat the same thing. Our market research divisions analyze economic trends. They keep an eye on changing tastes and shifts in demand. Sales quotas, plans for new products, investment in plant and equipment, the direction of research — all are solidly based on knowledge of and adaptation to the



market. It seems, however, we separate the two worlds. Too often we do not apply the tried and tested methods of sales management to the equally, indeed more important area of political influence.

Politicians are in the business of harnessing opinion to their party. Their purpose is to gain power and keep it, but they know they can do this only by providing the right formula, including the right candidate, for the occasion. Their course of action is determined by the climate of the times. They do not go in for personal theories of economics or politics; they are neither radical left nor radical right. To them these fringes of opinion are luxuries. Logans have their day and peter out. And they cannot form a stable basis for political power. Above all, they respect the people. They are customers and they have the votes. Perhaps this sounds cynical. Not at all. It's realistic. In a democracy the people get their way. It's the way our system operates, and businessmen had better realize it.

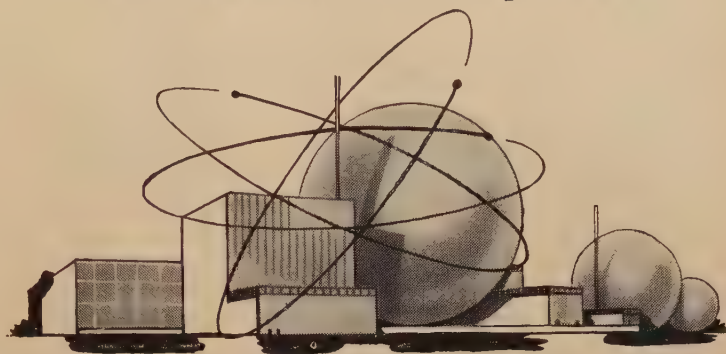
### **No Politicking**

Of course there are those who say that businessmen should mind their own business. Sure, they will give the money, serve on committees, and do community services — but they will do no politicking. Why shouldn't businessmen take an active part in politicking? Politics is already in our business — in wage regulation, price laws, safety rules, anti-trust legislation, labor relations, workmen's compensation, in control of stock issues, and in all the conditions attached to defense contracts. Those who insist on minding their own business will soon find they have very little to mind.

The future of businessmen will depend not only on their organizing ability, but also on their contribution to political life. All businessmen cannot and should not pretend to a role for which we are not fitted. The important thing, however, is that as a group we provide our share of leaders — informed men able to contribute to the formation of policy, and persuasive men gifted with the ability to win the confidence of the public.

We cannot, however, expect them to appear through a trick of heredity like biological sports. They rise by the encouragement and understand-

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ing of their business colleagues. This is an important condition. Inevitably as we participate more and more in political debate, we will be putting our necks out on controversial issues.

In view of the risk of economic sanctions, we may prefer the safer course of silence. But every businessman has not only the right, he has the obligation to speak out and he deserves the tolerant support of his colleagues. On some issues we will agree; on some we will disagree. The important thing is that all sides be heard and that an issue be thoroughly debated before it is determined — debated not only by Congressmen, by editors, by news and radio commentators, by labor leaders, but by individual businessmen all over the country.

It is true that businessmen are already participating in public life, and particularly in the administration in Washington. Often under great pressure, they are making a mighty contribution to the national welfare. We cannot, however, expect a few individuals to bear all our burdens. They are doing their job. Are we doing ours? The formulation of national policy cannot be wholly delegated to the government. It must grow out of continuing debate all over the country. What is done in Washington must be meaningful at the grass roots.

## ***Middle-of-the-Road***

Our government has been described as middle-of-the-road. By the evidence of all the polls, it represents a broad national consensus. This same viewpoint seems to be reflected in both political parties. It may well be, however, what we are having is a breathing space. Perhaps in our present mood we are not looking to a new era but resting from the old one. Moods, however, change. Events bring new problems.

There has been a lot of talk recently about a new conservatism. Indeed the word has come much into fashion. One of the new elements in American life is the felt need for some bench marks to guide us through the rush of events. The President has described himself as a dynamic conservative, accepting change as inevitable but guiding it by tested principles. How many of us, however, can give a name to our viewpoint, and if we can, what are our views in detail and

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will they stand the test of practical politics?

I am not suggesting that we all start writing political programs. The fact is that in part the job is being done. We need only to emphasize and encourage existing trends. The committee for Economic Development, with both business and academic participation, has for a number of years been rethinking the problems of the nation. There are other groups too, doing similar work.

### Today's Task

Today our task is above all constructive government. In the past, frequently that task was one of opposition. If a man wants a fight, there is not much you can do but give him one. It is always easy to criticize those with responsibility, and businessmen, whether in government or industry, have been convenient targets. Some people flourish on distrust and suspicion; they blow up grievances, question motives, disburse half truths, and promote class hatred. The tactics of industrial strife are, however, poor guides for national policy. And sensible men on both sides know it well.

No group has played a greater part in America than the leaders of industry and commerce. The qualities of those leaders have, however, changed with the times. Each period has had its tensions, and each the men to master them. Today those tensions are greatly compounded by the pace of events.

There was a time when a new product hardly affected the household; now business operations may transform the country and indeed, affect the world balance of power. The fact is, we are not just in business. We are remaking our society, and we are dealing with questions of peace and war. Americans, as someone has aptly said, have been promoted. And so indeed have businessmen. New responsibilities have been thrust upon us. We are preparing to discharge them. The time, however, is short, and failure will be fatal. In science, in business, in politics, this is a time when the call for ideas is insistent. We must think afresh about the ends we have in mind, and think too about the means to attain them. Here, then, is the challenge, but also the opportunity for businessmen in an election year.

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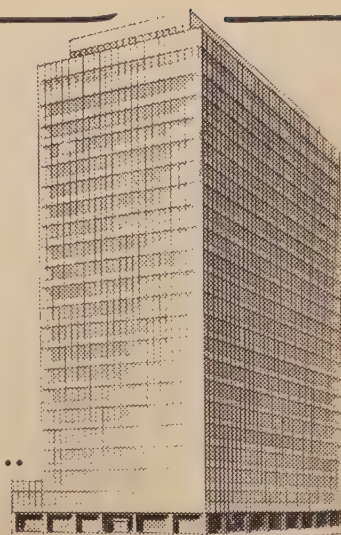
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## Industrial Developments

... in the Chicago Area

INVESTMENTS in plant facilities totaling \$26,494,000 were announced during the month of June, covering 36 projects in the Chicago Metropolitan Area. This brings the grand total for the first six months in 1956 to \$381,814,000. These figures may be compared with \$106,822,000 announced in June 1955 and \$196,222,000, in projects announced for the first six months of last year.

While the June total for 1956 does not break any records, it is a very substantial figure, and the cumulative total for the six month period is just slightly under the all time six month record of \$389,146,000 in projects announced during the first six months of 1942.

The types of projects which are included in these figures cover newly constructed plants, expansions of existing industrial structures, acquisitions of existing plants and purchases of land for future industrial use.

**Ethyl Corporation**, manufacturer of anti-knock and other compounds, will start construction of a multi-million dollar plant on 275 acres of land on the Illinois waterway, south of Joliet. Scheduled for completion in the fall of 1957, the plant will supply the entire middle west area with the company's products. The Chicago metropolitan area location was decided upon, after an extensive nationwide survey, because of the economy of distribution and the advantages of a waterway location. This firm, with general offices in New York City and plants in Baton Rouge, Baltimore and Houston, will employ approximately 500 people at its new location when in full production.

**American Can Company** will erect a steel processing plant in which it will prepare its own sheet

metal, taking the steel in coil form from the steel producers, and finishing it in the desired form for can manufacture. The new plant will be located in the Gary-Hammond area and will be the largest installation in a nationwide program for the erection of a total of seven plants of this type. The new Calumet area plant will have a total of 200,000 square feet of floor area, and will have an initial employment of about 500 persons.

• **Robinson Brothers and Company** in East Chicago has started to erect three buildings, with a total of 150,000 square feet of floor area, to house the company's entire operation as a steel warehouse and fabricator. The new plant is to be located on a 12 acre site at Oakton street and Lehigh avenue in Skokie. The entire project will be completed early in 1957, with partial occupancy by August, 1956. Herman and Salzman, architect and engineer; Harvey A. Hanson and Company, general contractor.

• **Joe Lowe Corporation**, 400 W. Ohio street, manufacturer of bakers' supplies, plans to erect a 100,000 square foot building on a six acre site at George street and Amling avenue in Melrose Park. This will be the first unit erected in a new industrial district in that suburb being managed by Farr, Chinnock and Sampson. A. Epstein and Sons, Inc., engineer.

• **Kitchens of Sara Lee, Inc.**, 2109 S. Carpenter street, has purchased a five acre tract of land at 5339 Elston avenue for future industrial development. The company has also acquired a plant of 40,000 square feet in River Grove to allow for an immediate need of additional floor space. A. Epstein and Sons, archi-

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• **Superior Concrete Accessories, Inc.**, 4110 Wrightwood avenue, is erecting a 70,000 square foot building in Franklin Park to which the company will move its operations when completed. The company manufactures clamps, ties and other metal concrete accessories. Bruce A. Gordon, architect; S. N. Nielsen Company, general contractor.

• **Lag Drug Company**, 4601 Wentworth avenue, is about to start construction of a 60,000 square foot plant in the 2700 block of West 50th street. The building will be utilized as an office and warehouse for the distribution of the company's products.

• **Meat Industry Suppliers**, 4432 S. Ashland avenue, manufacturers of meat packers seasoning, is erecting a

factory and office building of 50,000 square feet of floor area in Northfield on Eden's Highway. The plant will contain 50,000 square feet of floor area.

• **Luria Engineering Company**, manufacturer of steel buildings, headquartered in New York City, has broken ground for a steel fabricating plant containing 50,000 square feet of floor area on a 25 acre tract adjacent to the Chicago and Eastern Illinois Railroad in Chicago Heights.

• **Bastian Blessing Company**, 4201 W. Peterson avenue, is adding 26,000 square feet of floor area to its plant in the form of an addition to its manufacturing area, and a warehouse building. The company produces soda fountains and equipment and gas welding and cutting supplies. Fox and Fox, architect.

## Pick Your Job and Land It

(Continued from page 13)

target." This letter describes in detail what the applicant can do for that particular firm. The preparation of the rifle letter requires a knowledge of how the prospect sells, what his products are, his channels and methods of distribution, his methods of advertising and promotion and other pertinent facts relating to the position applied for. (If the position is in manufacturing, then find products made, probable methods, quantities, etc.)

Mail campaigns should be released to reach the prospects on other than Mondays. Two different general letters may be needed—one type for small firms and another when writing to huge corporations such as, say, the General Electric Company. Usually it is better to send out a limited number of letters. This will provide a test as to how many letters will be necessary to obtain an ample number of live leads. It also will enable the applicant to follow up promptly all requests for interviews. If the first letter does not pull satisfactorily, it should be changed before another mailing is made.

Letters should be individually addressed to the man above the job desired. They should be automatically typed to appear as though the firm addressed is the only firm being solicited. There's a tremendous psychological advantage in avoiding the mass or stereotyped look. The let-

ters should be sufficiently interesting to appeal to the prospective employer's self-interest. Resumes should not be enclosed. "Post Scripts," the humor section of the Saturday Evening Post, once said, "A resume is a list of your old jobs that pretty well cancels out your chances of getting a new one."

A presentation portfolio also is very helpful. It should contain case stories of problems faced, what was done about them, and the results. These show how the applicant's mind works; and if properly selected to represent the various parts of the job, they also show that the applicant can do the total job because he can do all the parts.

The physical appearance of everything put in the hands of a prospect is just as important as one's personal appearance. Simplicity is usually better than attempted cleverness or elaborate design. A presentation which is neat and easy to read will always be the most impressive.

How are prospect lists prepared? They are usually compiled from one's own memory, the suggestions of friends, business papers and news items. Management consulting firms, trade associations, and banks are other good organizations to help in making contacts with employers.

The first interview is the crucial point in the sales campaign. It is highly advisable to think out the



best way for handling all questions which are likely to arise, such as reasons for leaving former positions, and why a particular job is desired. An outline of the specific points to be covered in the first interview could be prepared but the impression of a rehearsed or memorized presentation must be avoided.

Also it is surprising how many times the interviewer does not ask questions which will bring out the points in which he is really interested. He can be helped by the applicant who should plan in advance what he wants the interviewer to know and what will really sell his services. But, better still, is the question technique such as: "Does this position require a knowledge of market research?" If the interviewer says it does, there is a natural opening for the details of the market research experience to be spelled out.

### Follow-up Letter

Comparatively few jobs are closed at the first interview. Follow up is therefore of great importance. A letter thanking the employer for the interview and reviewing points of special interest to him should be sent promptly after the interview.

One of the last things to be discussed in job hunting is salary. What to ask for is often a difficulty. The job seeker fears that if he asks too much, he will not be considered; and he may be right. But it is often as bad to ask too little. People will value an applicant much as he values himself. Inquiries about jobs similar to the one desired usually will provide a useful guide in determining what salary to ask for. If, when it comes, the salary offer includes definite promises for the future—salary increases, bonus, commission arrangement or length of service—the applicant's understanding of these should be put in a letter to the employer. This acts as a confirmation of the arrangement.

There's an old saying and a true one that there is more room at the top of the ladder than at the bottom. A competent, experienced executive does not need to have qualms when it becomes necessary for him to change jobs. By following the four steps outlined here he can become just as expert as his job hunting secretary. What's more, he usually can turn up several opportunities by which he can really strike his true market value.

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# Transportation and Traffic



**A** THREE-JUDGE Federal Court in Portland, Ore., has upheld the right of the Interstate Commerce Commission to issue Service Order No. 910 which, among other things, prohibits railroads from wilfully delaying the movement of loaded cars. The court rule that a petition to enjoin the commission from enforcing the order should be denied and that a temporary restraining order be vacated and set aside. The service order, issued to become effective April 9, 1956, was aimed at easing the current freight car shortage. Judge William East of the U. S. District Court at Portland, Ore., on the request of lumber shippers in the Pacific Northwest, issued a temporary restraining order blocking its enforcement. The three-judge court held that an emergency existed and that under such conditions it had no power to overrule the commission's decision. The commission restored the order effective June 13.

**C.A.B. Approves Helicopter Passenger Service in Chicago Area:** The Civil Aeronautics Board, in a decision handed down on June 8, approved the establishment of helicopter passenger service in the Chicago area. The board found that public convenience and necessity warranted the renewal of the certificate of Helicopter Air Service, Inc., so as to authorize the air transportation of persons, property and mail on a triangular route between Midway Airport and O'Hare Field and between these airports and downtown Chicago. The board also granted H.A.S. a temporary exemption to extend its routes as far as 60 miles from downtown Chicago. While H.A.S. has been operating in Chicago since 1949, its certificate only permitted the handling of mail. The Chicago Association of Commerce and Industry actively sup-

ported the company's petition for permission to carry passengers and cargo in addition to mail.

**• I.C.C. Service Order Bans More Than Two Days Free Time at Lake Ports:** Interstate Commerce Commission Service Order No. 914, issued effective June 14, 1956, prohibits railroads from granting more than 48 hours free time on export freight moving through Great Lakes ports. Exceptions are shipments of coal, coke, bulk grain, flaxseed and soybeans. The commission at the same time rejected supplements issued by the western railroads which proposed to increase to six days the free time on export freight moving via the Ports of Chicago, Milwaukee, Green Bay and Manitowoc. These supplements were filed to become effective June 15.

**• Railroads Modify Demurrage Rules Proposal:** The Association of American Railroads is submitting proposed changes in demurrage rules and charges to a vote of the car-owning railroads. The proposal being voted on would make the following changes:

1. Reduce the number of cancellable debits under Average Agreement from four to two.

2. Increase demurrage rates to \$4.00 for each of the first two chargeable days; \$7.00 for each of the next two chargeable days, and \$10.00 for each day thereafter.

3. Charge for Saturdays, Sundays and Holidays on Straight Plan cars on same basis as Average Agreement.

This is a modification of the original proposal which in addition to the above would also:

1. Require two credits to offset one debit.

2. Eliminate cars loaded or unloaded in intraplant service from

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Average Agreement and reduce free time for loading or unloading to 24 hours and do not exclude Saturdays in computing time.

3. Eliminate Note 2 to Section D, Demurrage Rule 2, which provides that cars bulletined on Saturday will be treated as bulletined on Monday.

• **Intercity Truck Tonnage Increased 7.9 Per Cent in First Quarter:** Tonnage handled by intercity motor carriers during the first quarter of 1956 registered a gain of 7.9 per cent over the same period of last year, according to the American Trucking Association's Department of Research.

• **Hearing Set on Central Territory Motor Rate Adjustment:** Hearing in I. & S. M-8466, Revised Class Rates and Ratings, Central Territory, will be held July 18, 1956, at 9:30 a.m., in Room 852, U. S. Custom House, 610 Canal street, Chicago, before Interstate Commerce Commission Examiner Fuller. The proceeding involves a suspended class rate adjustment published in tariffs of Central States Motor Freight Bureau to become effective May 1, 1956. The adjustment proposed (1) establishment of the railroad Docket No. 28300 scale of class rates, plus 7 per cent; (2) an arbitrary of 45 cents per 100 pounds on shipments under 2,000 pounds and 20 cents per 100 pounds on shipments weighing from 2,000 to 5,000 pounds; and (3) cancellation of less truck load and any-quantity exception ratings and substituting in lieu thereof ratings in National Motor Freight Classification No. A2. The Commission recently granted the carriers special permission to publish an interim class rate increase of 6 per cent, effective June 20, 1956.

### Correction

In the article, "The Store Goes To The Customer" (June issue of COMMERCE) the total area given for the Edens Plaza shopping center should have been 210,000 square feet and the Carson Department Store area in it as 118,000 square feet. Marshall Field and Company's Old Orchard Center store contains 305,000 square feet and the whole center about 1,000,000 square feet.



# Here, There and Everywhere

(Continued from page 8)

...en entirely by radio transmission  
...which is impaired by magnetic  
...orms.

**Chemist Shortage** — Unless high  
schools and colleges graduate chem-  
ists in increased volume, Illinois will  
be short 7,200 technically trained  
scientists by 1960. This is because of  
the chemicals industry's recent  
growth and expansion.

Describing the industry's need for  
manpower, William B. Plummer,  
president of Indoil Chemical Com-  
pany, pointed out that in Illinois  
alone 30 new chemical construction  
projects worth \$90.5 million are  
either underway at the moment or  
else planned for 1957.

Mr. Plummer said that Chicago-  
area chemical companies, seeking to  
staff their laboratories, were offering  
summer jobs through the American  
Chemical Society to science teachers  
and science majors.

In the Chicago area there has  
been an \$80 million expansion of  
chemical facilities since 1945, accord-  
ing to Mr. Plummer. This is second  
only to the primary metals industry.

"In the past decade, manpower  
needs of the industry in Illinois in-  
creased 54 per cent so that there now  
are 50,000 persons on chemical pay-  
rolls. Illinois is the third largest em-  
ployer of chemical workers," reports  
Mr. Plummer.

## Freight Cars

(Continued from page 20)

...imately two to one. ACF says an  
average freight train of conventional  
cars outweighs a similar train made  
up of Adapto cars by as much as 800  
tons. For a 1,000-mile run, the firm  
adds, this means an operating cost  
saving of \$4,000 for the Adapto train,  
with no reduction in the amount of  
freight carried.

The piggyback car is 75 feet long,  
weighs about half as much as a con-  
ventional flat car of that length. The  
clamping device which holds truck  
trailers in place has a series of 15  
rubber and electro-galvanized steel  
plates, 7 5/8 inches in diameter, which  
are interwoven to absorb shock. In  
tests, this cushion absorbed the force  
generated by two loaded trailers,  
weighing 40,000 pounds each, which  
were subjected to 12 mph bumps.  
Both the trailers and their cargoes

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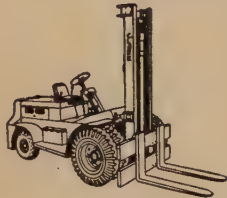
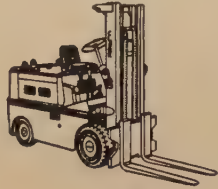


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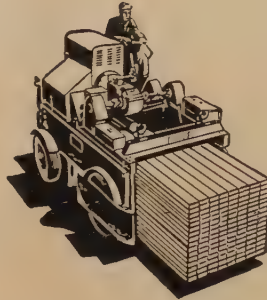
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ended up in better condition than if they had received the same shock while tied down to a conventional flat car, say officials of Piggyback, Inc., which holds American rights to the new trailer transporter.

If the Unit-Load car is bumped, the force acting on any piece of freight is only one-fifth what it would be in a conventional boxcar, thanks to the partitions. Also, each compartment is just big enough to accommodate eight standard-size (48x40 inch) pallets. This snug fit reduces damage by reducing the distance a piece of freight can shift if the car is bumped.

The Adapto car depends for the most part on special springing and coupling devices to produce a soft ride. Like the other new equipment, it costs less than similar freight cars of standard design. Most important, perhaps, the Adapto makes it possible to reach additional shippers who lack rail sidings.

One expert says the new freight cars represent a "revolution in rail transportation." Judging by the interest the cars have generated, a lot of people would probably agree with him.

**Water Supply**

(Continued from page 15)

hold up for 50 years or longer this apparent strength begins to look much less impressive. Actually, the pipe section is subject to a long list of debilitating diseases.

Cars and trucks moving on the pavement overhead may set up vibrations that will crack it. Pneumatic drills, scoop shovels, and other construction equipment, in the process of doing their work, may accidentally weaken or puncture the pipe. Chemicals in the adjoining soil can set up the equivalent of a storage battery, with the metal in the pipe as one terminal. Over the years, battery action converts this metal to carbon, which water pressure will poke a hole through as easily as you can poke a hole through a sheet of paper. Shifts in the soil may set up stresses which eventually cause cracks and additional leaks.

The city has two rather unique tests for finding these leaks. With both, the first step is to shut down a section of pipe, usually about two blocks long, by closing valves at either end. Service pipes leading to each user's outlet are also blocked.



If there are no leaks, the shut-down should make the water stand still in the test section. Since water usually makes noise when it moves, you can often "hear" the leak provided you have something to listen with. The gadget the city uses is called an "aquaphone." It consists of an ordinary telephone receiver hooked up to a long pole. The bottom of the pole is placed against the pipe, usually at a valve or manhole opening where the pipe is easily accessible from the surface. The intensity of the sound, generally speaking, is inversely proportional to the distance from the leak, so, by making several soundings, it is often possible to get a pretty good idea of where the trouble is located.

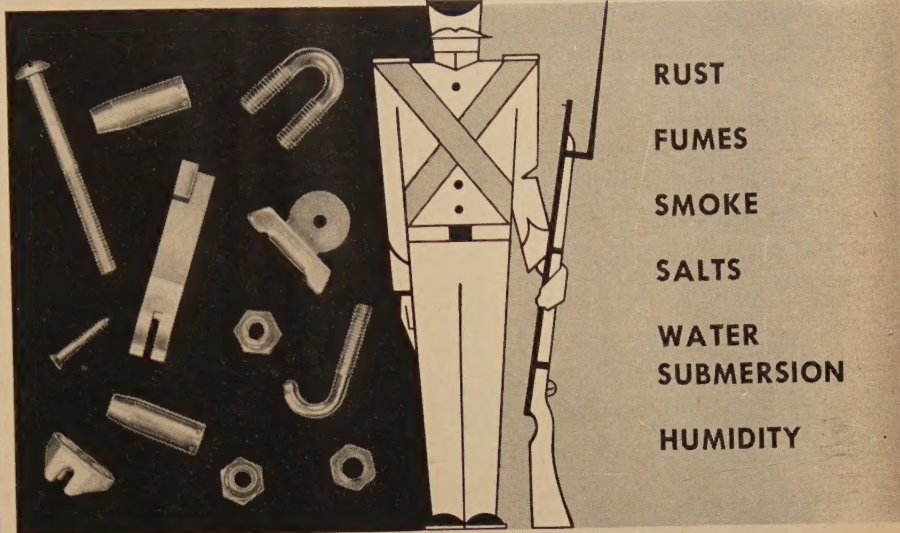
The second test which, incidentally, was invented by Chicago water Department personnel, is used when the pipe is several feet below the surface and too deep to permit an accurate report from the aquaphone. A harmless red dye is pumped into the test section under high pressure. The dye colors the water standing in the pipe up to the point where the leak is located. Then, the end of the test section is opened, and the amount of clear water that comes out is measured. Engineers relate this quantity to the size of the pipe, and with the aid of a slide rule, are able to determine how far back the hole is in the line.

### Leak Detection

In 1932, when the leak detection program started, between 30 and 45 per cent of the water Chicago pumped was leaking out through the mains. Today, leakage totals from 10-15 per cent of all water pumped. Because some leakage is inevitable in any system, about the best the city can hope for is a 90 per cent utilization factor. Thus, the present leakage amounts to little more than a trickle, and, on a comparative basis, is a far better performance than most other cities in the nation have been able to turn in.

But the leak detection program, no matter how efficient, can't begin to keep up with the Chicago area's ever-growing thirst for water, which is one reason why \$154 million have been earmarked for improvements to the supply facilities during the next five years; another \$35.5 million will be poured into new sewers during the same period. Money for

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- DIRECT MAIL CAMPAIGNS

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both programs will come from operating revenues, issuance of water certificates, bond issues, and state and federal grants.

The five-year water program is part of a capital improvements plan that has been drafted for the whole 25-year period ending in 1980. When completed, this plan will provide the necessary capacity at a cost of approximately \$300 million. Between now and 1960, approximately \$60 million will be spent for new mains and water tunnels, and another \$18 million will go into new pumping station facilities.

Typical of the groups that will benefit from these outlays are residents of a broad slice of the south side extending roughly from Roseland to Stickney, Oak Lawn to the stockyards. At present, a major source of water for this area is a 16 foot diameter tunnel laid under 73rd Street which feeds a maximum of some 375 million gallons a day to two pumping stations — one in Roseland, the other at Western and 49th. Neither station has enough reserve supply for peak demands. So the city is spending about \$2 million on a gigantic "swimming pool" at the Western Avenue station, which will store approximately 30 million gallons of water.

### Filled at Night

The reservoir, which is about 275 feet deep, 526 feet long, and 300 feet wide, will be filled at night and emptied during the day as peak load conditions arise. By tapping its swimming pool, the Western Avenue station will need less from the 73rd Street tunnel and thus more will be available for Roseland.

Over half of the \$154 million will be spent on the mammoth central district filtration plant, largest facility of its kind in the world. Engineers expect to present the completed plant to the city as a Christmas present in 1960. When the big day arrives, some 2.8 million residents in the city and suburbs will begin drinking crystal clear water similar to that now flowing out of the south side filtration plant.

You can get some idea of this project's vastness by picturing the area between Madison and Van Buren, State and LaSalle. Roughly, this is the size of the space to be occupied by the filtration plant site. A huge cofferdam, built of stones weighing four tons or more each, is



being constructed around the perimeter, and the water inside — amounting to some 200 million gallons — is being pumped out.

The pumps that will draw water from the lake into the plant are approximately four stories high. Each of the six units will discharge a stream of water measuring 10 feet in diameter. That flow comes to 180,000 gallons a minute, 260 million gallons a day for each pump.

A little over six miles of water tunnel, most of it 16 to 20 feet in diameter, is being laid at a depth of around 170 feet below the surface of the lakefront. A substantial portion of this surface is covered by water. Cost of the tunneling will come to \$12.7 million.

### Vertical Shafts

Before the tunnel hole can be excavated, contractors have to get their men and materials down to the proper level. This requires a series of vertical shafts. The largest one, with an opening that measures 40x12 feet, will be sunk near Belmont harbor. Down this hole on a freight elevator must ride, among other items, an electric locomotive and a string of railroad cars which will help clear away the tons of rock and dirt now occupying the space needed by the water tunnel.

The actual excavation will be accomplished with the aid of dynamite. Approximately 10 feet of hole will be created by each explosion. One crew will blast their way southward from the Belmont Avenue shaft to the filtration plant, then back again to a point at the foot of Chicago Avenue, a total distance of nearly four miles. Another will head north to Wilson Avenue, a little over two miles away.

When these labors are completed and the filtration plant opens, residents of the north and west sides will have water that is "a little purer" than that supplied to their brethren on the south side, says George Salter, engineer in charge of the project. Considering that the latter water is 99.99 per cent pure, there isn't too much more anybody could ask for.

Meanwhile, a lot of people, living both inside and outside the city, will be able to turn on a faucet and see plenty of water pour out. They may not realize it, but this simple action will justify all the millions that are now being spent.

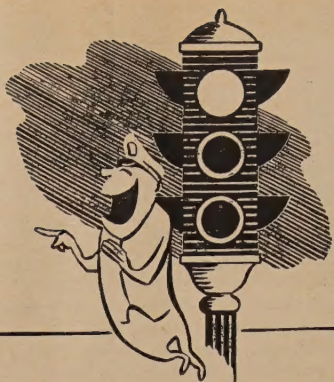
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# Stop me...If...



The occasion was a testimonial dinner for the town's leading citizen.

"Friends," the leading citizen said, "when I first came to your city 50 years ago, I had only one suit on my back, one pair of shoes, and all my earthly possessions were wrapped in a red handkerchief over my shoulder. This city has been good to me — and I worked hard. Now, I am president of the bank; I own ten buildings and five companies. Yes, friends, your town has been good to me."

After the banquet, an awed youngster approached the great man and asked timidly, "Please, sir . . . what did you have in that red handkerchief when you first came to town?"

"Well, son, if I recall rightly, I had about \$300,000 in cash and \$850,000 in securities!"

"And in conclusion, my dear students, I shall give you a demonstration of the evils of the Demon Rum. I have here two glasses, one filled with water, the other with whiskey. I will now place a worm in each glass. Notice how the worm in the water squirms and vibrates with the very spark of life, while the worm in the whiskey writhes in agony, curls up and dies. Now, young man, what is the moral of this story?"

Young man: "If you don't want worms, drink whiskey."

A frustrated motorist had tried to pass a huge truck for many miles. Every time he tried to go around, the truck driver increased his speed or swerved toward the middle of the road. Finally, at a stop sign, the motorist pulled alongside the truck.

"Well?" growled the truck driver.

"Nothing important," was the reply. "I know what you are — I wanted to see what one looks like."

Jock McDougal had blown his lassie to a movie and even hailed a cab to take her home. As they were riding along, she, knowing his natural bent concerning money, remarked: "Oh, Jock, it does make me feel awfully wicked riding like this."

At that Jock cheered up tremendously. "Then maybe," said he, "it'll be worth the money after all."

The policeman raised his hand. The young lady stopped the car.

"As soon as I saw you, miss," the policeman declared, "I said to myself, 'Forty-five at least.'"

"Oh, no," said the young woman, "It's this hat that makes me look so old."

The drought in this rural community had been long and severe. At Sunday's services the farmers requested the minister to pray for rain. It was done, and the rains came. It rained unceasingly all the next week and was still raining at next Sunday's meeting.

Just as the congregation had assembled, a nearby stream flooded its banks and water began pouring in on the floor of the church, causing members to scramble onto the pews. The preacher lifted his eyes heavenward and said: "Lord, I prayed for rain, but this is ridiculous!"

A man chanced upon a large number of copies of a long, incredibly dull book which contained no index. Since they were cheap he bought them up and mailed them anonymously to his friends with this comment:

"I think you will find this book interesting, especially the references to you, which, I hope, you will not consider offensive."

Johnny had seen Mother measure a yard by holding one end to her nose and the other at arm's length. One day he came running with a piece of rope and said:

"Here, Mother, smell this and see how long it is!!"

A harried business executive went to his physician to get a prescription for sleeping pills only to find that he was allergic to sedatives.

"What about some of this twilight sleep I've read about?" he asked the doctor.

"Oh, that's only for labor," was the reply.

"Good heavens!" exclaimed the executive, "haven't you anything for management?"

First Farmer: "Don't think much of the new weather prophet the Government's got on the radio."

Second Farmer: "Well, let's don't do any complainin' about it. Just think how bad it would be if the Government started regulatin' the weather instead of predictin' it!"

A California bank received the following brief note with a final payment on an auto contract: "Dear Sir: This should make us even. Sincerely, but no longer yours."

In the championship match of the marble tournament, one little boy missed an easy shot and let slip with a real cuss word.

"George!" called the preacher from the sidelines. "What do little boys who swear when they are playing marbles turn into?"

"Golfers," came the prompt reply.

A Washington laundry is said to send back clean shirts in a white paper band bearing this message: "Have you kissed your wife this morning?"

"Well, darling," said the little boy's mother as the boy walked into the kitchen, "were you a good boy in school today?"

"Yes," said the boy. "How much trouble can you get into standing in the corner all day?"

